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P431 0 15 30 ×50

Figure P431 The result of immortalized lymphocyte cell line transformation on day 0 day15 and day 30 ×50

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分子诊断与治疗杂志

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Monthly Volume 12 Number 4 April 2020

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Monthly Volume 12 Number 4 April 2020

CONTENTS

RNA GAS5

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RNA LncRNA ᵐ Ӈ Ӈ Ь Ї Ь 200 nt
RNA ɻ LncRNA GAS5 ᵐ ~ ɔ ǫ̈ Ặ LncRNA ɬ ɜ ɕ Ӈ Ь ж 1 ˝ ɪ
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LncRNA GAS5 ɔ ợ

The Role Of LongNon - Coding RNA GAS5 In The Occurrence And Development Of Atherosclerosis And Atherosclerosis-related Diseases

WEI Guijiang[1 2 3] YANG Jun[1] WEI Yesheng[1]

1. Department of Medical Laboratory Affiliated Hospital of Guilin Medical University Guilin Guangxi China 541000 2. Medical College of Guangxi University Nanning Guangxi China 530000 3. Department of Medical Laboratory Affiliated Hospital of Youjiang Medical University for Nationalities Baise Guangxi China 533000

ABSTRACT LongNon Coding RNA LncRNA is a type of RNA that is located in the nucleus or cytoplasm and is longer than 200 nt. LncRNA GAS5 is a member of the LncRNA family that has attracted attention in recent years. The encoding gene is in the q25 regio of human chromosome 1, has a total length of 4 087 nt and consists of 12 exons. Several studies have shown that LncRNA GAS5 is involved in inflammation mediates vascular endothelial cell damage and plays an important role in the development of atherosclerosis and related diseases. This article reviews the role of LncRNA GAS5 in the occurrence and development of atherosclerosis and atherosclerosis related diseases.

KEY WORDS LncRNA GAS5 Atherosclerosis Coronary heart disease Diabetes

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E-mail wyshi22@163.com

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1 LncRNA GAS5

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Ǐ Ψ LncRNA GAS5 ɟ
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LncRNA GAS5 نح غ ɔ Ω̃ ĕ H
Ą̈ Ə [15] ɟ φ Yao [16] ۆ Ψ ς
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Western blot IGFBP 5
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LncRNA GAS5 نح غ ҥ PDGF bb ж

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Ъ LncRNA GAS5 Ά miR 135a ˜ Ə
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2 LncRNA GAS5

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mTOR LncRNA GAS5 Ə ε mTOR ɜ
ġ ɻ Ά ǫ ה ה [30] ɟ ǔ ɒm
ǔ LncRNA GAS5 ǔ ǫ
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ﺍ 98 ʒ ɾ Ə ε LncRNA
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3 LncRNA GAS5

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16 Yao Jiamei Shi Zanhua Ma Xinhua Xu Daomiao Ming Guangfeng. LncRNA GAS5/miR 223/NAMPT Axis Modulates the Cell Proliferation and Senescence of Endothelial Progenitor Cells through PI3K/AKT Signaling J . J Cell Biochem 2019 120 9 14518 14530.

17 Silva Telma Jager Willi Neuss Radu Maria Sequeira Adelia. Modeling of the Early Stage of Atherosclerosis with Emphasis on the Regulation of the Endothelial Permeability J . J Theor Bio 2020 1 e110229.

18 Zheng Bin Yin Weina Suzuki Toru Zhang Xinhua Zhang Yu Song Lili et al. Exosome Mediated miR 155 Transfer from Smooth Muscle Cells to Endothelial Cells Induces Endothelial Injury and Promotes Atherosclerosis J . Mol Ther 2017 25 6 1279 1294.

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19 Li Linqing Li Yongjun Pang Chengchun. The Role of Micrornas in the Involvement of Vascular Smooth Muscle Cells in the Development of Atherosclerosis J . Cell Bio In 2019 43 10 1102 1112.

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20 Li Yihui Qin Ranran Yan Hongdan Wang Feng Huang Shanyong Zhang Yun et al. Inhibition of Vascular Smooth Muscle Cells Premature Senescence with Rutin Attenuates and Stabilizes Diabetic Atherosclerosis J . J Nnut Biochem 2018 51 91 98.

21 Zhang Qinghai Hu Jie Wu Yan Luo Hairong Meng Wen Xiao Bo et al. RHEB Ras Homolog Enriched in Brain 1 Deficiency in Mature Macrophages Prevents Atherosclerosis by Repressing Macrophage Proliferation Inflammation and Lipid Uptake J . Arterioscler Thromb Vas Biol 2019 39 9 1787 1801.

22 Zhang Xianfeng Yang Yang Yang Xinyu Tong Qian. miR 188 3p Upregulation Results in the Inhibition of Macrophage Proinflammatory Activities and Atherosclerosis in Apoe Deficient Mice J . Thromb Res 2018 171 1 55 61.

23 Liu Kefeng Liu Chen Zhang Zhengyu. LncRNA GAS5 Acts as a ceRNA for miR 21 in Suppressing PDGF bb Induced Proliferation and Migration in Vascular Smooth Muscle Cells J . J Cell Biochem 2019 120 9 15233 15240.

24 Tang Rui Mei Xiaohan Wang Yungchun Cui Xiaobing Zhang Gui Li Wenjing et al. LncRNA GAS5 Regulates Vascular Smooth Muscle Cell Cycle Arrest and Apoptosis Via P53 Pathway J . Biochim Biophys Acta Mol Basis Dis 2019 1865 9 2516 2525.

25 Sun Yuechen Xu Lan Tan Ying. Long Non Coding RNA GAS5 Promotes PDGF bb Induced Proliferation and Migration of Vascular Smooth Muscle Cells Via Regulating miR 137/IGFBP 5 J . Immunol J 2018 34 10 856 862.

26 Shen Songhe Zheng Xiaoli Zhu Zhixiang Zhao Sen Zhou Qing Song Zhiming et al. Silencing of GAS5 Represses the Malignant Progression of Atherosclerosis through Upregulation of miR 135 J . Biomed and Pharmacother 2019 118 1 e109302.

27 Chen Lei Yang Wenjin Guo Yijun Chen Wei Zheng Ping Zeng Jinsong et al. Exosomal LncRNA GAS5 Regulates the Apoptosis of Macrophages and Vascular Endothelial Cells in Atherosclerosis. PLoS One 2017 12 9 e0185406.

28 Polak Joseph Ouyang Pamela Vaidya Dhananjay. Total Brachial Artery Reactivity and First Time Incident Coronary Heart Disease Events in a Longitudinal Cohort Study The Multi Ethnic Study of Atherosclerosis J . PLoS One 2019 14 4 e0211726.

29 Jiang Dan Sun Min You Linna Lu Kai Gao Lei Hu Chunxiao et al. DNA Methylation and Hydroxymethylation Are Associated with the Degree of Coronary Atherosclerosis in Elderly Patients with Coronary Heart Disease J . Life Sci 2019 224 1 241U‘ 1 P M `` 0 0 J B MÕY F 1 Â ÷ •g=UÀ UÂ $DP ð ó

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COVID 19

RT PCR

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Nucleic Acid Detection of Different Specimen Types of SARS-CoV-2 Base on Real-time Fluorescent RT-PCR

ZHOU Gang[1] LI Chao[1] ZHENG Guodong[1] LIU Hongtao[1] ZHOU Rongrong[1] WANG Hongtao[1] WANG Gangping[2]

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ABSTRACT Objective To investigate the positive detection rate of Severe Acute Respiratory SyndromeCoronavirus 2 SARS CoV 2 in different samples in order to provide guidance and suggestions for the prevention and control of epidemic. Methods A total of 3 284 throat swabs nasopharyngeal swabs sputum specimens and fecal specimens were collected from 2 258 SARS CoV 2 suspected patients who were admitted in our hospital from January 2020 to February 2020. The real time polymerase chain reaction RT PCR method was used for PCR amplification and SPSS19.0 software was used for statistical analysis. Results A total of 79 positive samples were detected among 3 284 samples A statistical analysis was performed on the positive detection rates of different sample types tested at the same time and the difference

2019KJYF319

1. 276826
2. 276800
E-mail wgprzph93@126.com

was statistically significant P<0.05 . There are 13 male suspects and 7 females in this study. respectively no statistically significant difference in gender positive detection rates P>0.05 . The results from different sample types showed that the positive detection rate of throat swabs was the lowest nasopharyngeal swabs and sputum samples were higher than throat swabs. Interestingly the positive detection rate of fecal samples was the highest although the sample number in this group was small compared to other types . However there was no significant difference in the positive rate of the same suspected patient with different sample types at the same time. Conclusion The RT PCR method has different positive detection rates for different sample types which can provide guidance for the selection of samples in laboratory testing and better prevention and control of epidemics.

KEY WORDS Real Time Polymerase Chain Reaction Positive rate SARS CoV 2 throat swabs

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3 n %

Table 3 SARS CoV 2 nucleic acid detection results at the same time in the same suspected patient with different sample types

n %

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		303	1 0.33	302 99.67		
		909	1 0.11	908 99.89		
	i ˝	4	0 0.00	4 100.00		
4	˝	4	0 0.00	4 100.00	/	/
	.	4	0 0.00	4 100.00		
		12	0 0.01	12 100.00		
	i ˝	280	7 2.50	273 97.50	0.079	0.788
280	˝	280	6 2.14	274 97.86		
		560	13 2.32	547 97.68		
	˝	132	10 7.58	122 92.42	0.733	0.521
132		132	14 10.61	118 89.39		
		264	24 9.09	240 90.91		

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ώ ã щ НЬО † ɟ ΄Y SARS CoV 2 ẇ ה щ ε Ά ɟ ’ SARS CoV 2 ε í w ˅ вε w ɟ Ч SARS CoV 2 i ˝ в ˝ в ẇ . Ό Ό Ά ę ђ Ό [9] ζ Ɑ ġ ε ה ططئى ˝ˀ Ά ˩ ╥ m ى Ά Ξ ى Ό ’ ж í ش ى Ό ɟ Ψ ᾰ Ό τ ς Ά Rui Liu [9] ˝m ئو ہ Ỉ ę ђ Ψ ς Ψ Нь [10] ’ Ά ˩ Ά ɟ ᾰ 4 ʒ Ч Ό ε Ў 1 ʒ Ч i ˝ в ˝ ج ∨ ∨ ɟ ה ~ SARS CoV 2 ˆ Ɑ ġ в ˆ ’ ї вУ ɨ ġ ώ [11 12] RT PCR Ή Ό Ţ e ε 30%~ 50% [13] ɟ ġ ǒǔ SARS CoV 2 Ψ ˊ Ў Ч ˊ вí w ẇ ḍ в ى ˊ w ẍ ˆ ɟ ώ SARS CoV 2 ى ε i / ˝ i ˝ Ό ң Ά m [14] ɟ SARS CoV 2 Ⱪ Ⱪ ∧ Ⱪ SARS CoV 2 Ά Ă ΄Y ئو ʒ . Ψ ᾰ Ъ SARS CoV 2 [15] ƒ . ئو í Ψ ε ى Ψ . ┐ ˝ ε è / . Ό 56.25% Ά ∨ ỳ [16] m ɟ í א ẇ ╥m ˝ Ж Ό Ό ˝ . Ỹ ɟ ġ ˀ m Ч ẘ m ˝ ˀ ى

COVID 19

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2019 ىي ợ ẉ PCR ĭ ɻ
2019 ىي ợ ىي ợ ẉ PCR

The effect of 2 different inactivation methods on the results of viral nucleic acid in 2019 new coronavirus throat swab specimens

JIANG Lei[1] ZHANG Liyuan[2] LIU Daning[2]

1. Laboratory of Puyang Oilfield General Hospital Puyang Henan China 457001 2. Laboratory of Puyang people s Hospital Puyang Henan China 457000

ABSTRACT Objective To investigate the effect of two different pharyngeal swab specimens inactivation methods on the results of 2019 new coronary virus fluorescent quantitative PCR. Method Three cases of 2019 new coronary virus positive specimens were treated by two different inactivation methods the nucleic acids were extracted by manual centrifugation method from three groups of samples which were inactivated at 56 for 30 minutes and inactivated with guanidine salt RNA preservation solution. Simultaneous detection of virus content with two different nucleic acid detection kits the results of qPCR were analyzed statistically. Result The results of two different nucleic acid detection reagents showed that the results of the three groups which were not inactivated inactivated at 56 for 30 minutes and inactivated with guanidine salt RNA preservation solution were significantly correlated and had good consistency. The correlation coefficients among the three groups were all above 0.98 P<0.001 . Conclusion 2019 new coronary virus nucleic acid qPCR results were not affected by the two inactivation methods.

KEY WORDS 2019 new coronary virus Novel coronary virus pneumonia qPCR

2019 ىي ợ 2019 novel coronavirus ѡ ئى 10 Y ɻ 2019 nCoV ’ ѵ Ч
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PCR Ⱥ ε ABI7500 Life Technologies NY USA ɟ

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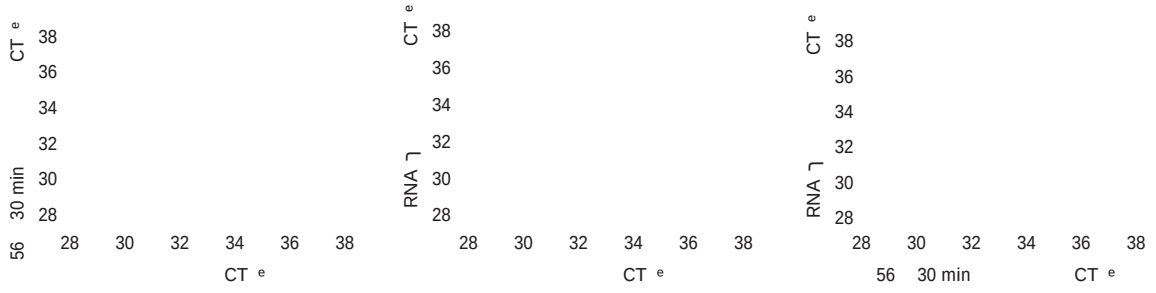
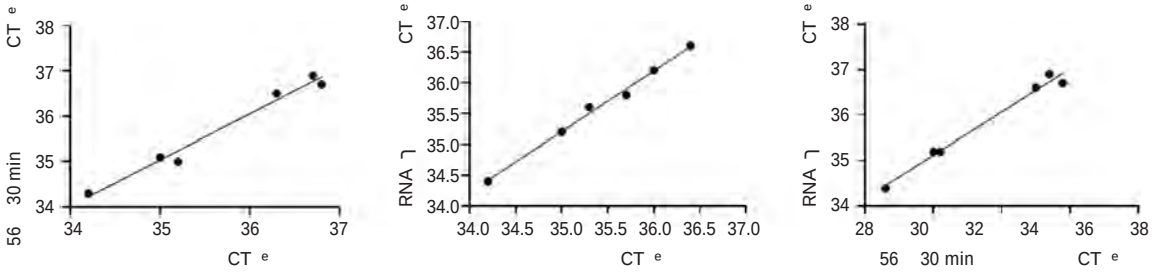


1 56 30 min RNA qPCR A

Figure 1 Correlation analysis of qPCR results among the un inactivated group the inactivated group heated at 56 for 30 minutes and the guanidine inactivation group detection kit A



2 56 30 min RNA qPCR B

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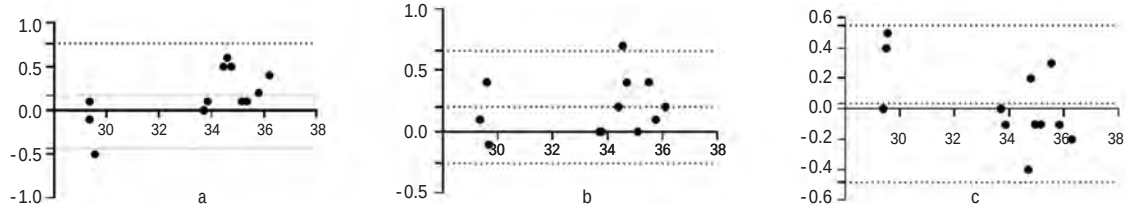

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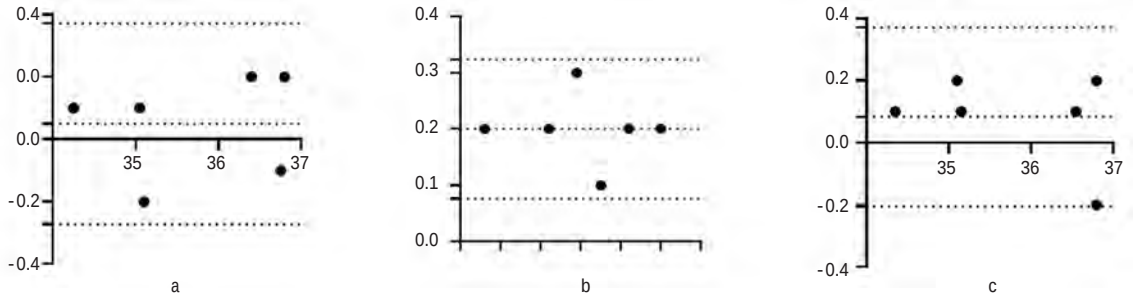
Figure 3 Consistency analysis of qPCR results among the un inactivated group the inactivated group heated at 56 for 30 minutes and the guanidine inactivated group detection kit A



4 56 30 min RNA qPCR B

Figure 4 Consistency analysis of qPCR results among the un inactivated group the inactivated group heated at 56 for 30 minutes and the guanidine inactivated group detection kit B

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COVID 19

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Analysis of the clinical manifestations and computed tomography characteristics of patients with coronavirus disease-2019 COVID-19

CHEN Shaojin[1] WANG Xiaoxia[1] WANG Licheng[1] CHEN Hai[1] ZHANG Meng[2]

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ABSTRACT Objective To analyze the clinical presentations and computed tomography characteristics of coronavirus disease 2019 COVID 19 and to further improve the understanding of the disease. Methods A retrospective analysis and summary of the clinical manifestations and CT imaging features were performed based on 15 patients with COVID 19 diagnosed in our hospital since January 2020. Results Most patients diagnosed in this study were men 67% 10/15 aged 25 to 71 years with a median age of 54 years interquartile range of 37 to 65 . Most of them were over 50 years old 53.3% 8/15 . All 15 cases had a history of contact with the affected area 100% . The clinical manifestations are fever cough dry cough or sputum with white mucus some accompanied by chest tightness shortness of breath and fatigue. Most patients were in early or advanced disease stages according to the chest imaging manifestations. They have a ground glass patchy shadow in bilateral pulmonary multi lobular lesions predominantly in the subpleural regions blurred lesion margins. They were also accompanied by thickening of blood vessels thickening of the pleura bronchial inflation and increased lymph nodes in the mediastinum in some cases. 15 patients have positive nucleic acid tests for the

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novel coronavirus ORF1ab and N genes. In addition 93% 14/15 of patients have high level of hypersensitiv ity C reactive protein. Conclusion COVID 19 patients have fever and cough at the early stage and there are abnormal chest CT examinations. The combination of epidemiological investigations clinical manifestations chest CT imaging characteristics analysis and nucleic acid detection and other laboratory test results will help early screening prevention and control of COVID 19.

KEY WORDS Coronavirus disease 2019 Clinical manifestations Computed tomography characteristics

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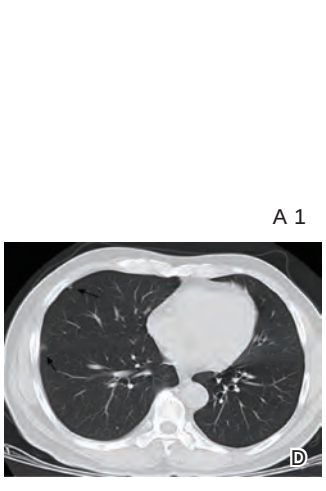

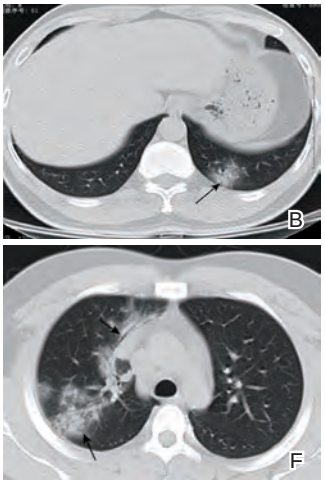

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ѧ A 65 A 1 א Y ~ ה ğ̈ ŏ̃ ל ש ; ۱ ŏ̃ ɟ A 2 ; ~ ' ɟ ѧ B 37 ; ~ نح ً Ὼ غ ضم ل ۱ م ' ɬ Ń Ї ' ههـ ɟ ѧ C 68 א ẅ ههـ ^ ɔ ~ ɞΨ ~ ש א ; ~ ŏ̃ ɞ Ὼ ً ج ɟ ѧ D 59 ^ ɔ ~ ɞΨ ~ ; Y Ж 3~5 mm Ὼ ɟ ^ ´ ~ ههـ Ḥ ѧ E 58 א ŏ̃ ל ¥ ~ ههـ Ḥ ש ɬ Ń ẹ Ї ههـ ɟ ѧ F 25 ^ ^ ɔ ~ ל ẹ Ї ' ẅ ¥ ۱ ɟ ѧ G 54 א Y ~ ה ğ̈ ; ۱ ŏ̃ ´ ɟ א ; ~ نح ה ; ۱ ŏ̃ Ά ɟ

1 COVID 19 CT

Figure 1 The chest CT imaging of partial COVID 19 patients

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2019 nCoV Ά MERS CoV ۱ SARS CoV ◌ٔ ◌ٓ

ж ợ ᵛ Y ۱ ɟ 2019 nCoV Ά SARS CoV ح غ Ѿ Ч ε 75%~ 80% [1 4] ΄Y Ά SARS CoV ح غ Ѿ Ч 86.9% [1] ε Ψ ╞ ’ ε Ɑ ζ ъ Ψ ŏ ặ ợ Ά 2019 nCoV ح غ Ѿ Ч 99% ’ ε 2019 nCoV ğ Ψ ζ [5] Ж Ψ ζ ш [m] [6] ɟ Ψ 2019 nCoV Ά SARS CoV Ė ◌ٓ ɔ ا 2 ɔ ا ACE2 ’ ẹ ị Ά ACE2 ´ ъ Ὼ [m] ж ζ [7 8] ɟ ΄Y ◌ٔ ѡ 86 Y 2019 nCoV ح غ ŏ ה ẹ ğ ۱ Ь [9] ɟ ѽ COVID 19 ζ К ε ی ợ ۱ ɟ ζ ۷ Ч К ۱ К ğ Ψ Ϛ Ὸ ğ ί К ’ ۱ К ш Ă ɟ [10 11] ŏ ğ ã̂ ѡ 31 Y 44 672 ҷ COVID 19 ҷ ŏ ה ğ 30~ 79 ε ζ ΄Y Ң ΄Y ← Ң ẹ оу 7.3 ʁ [12] ɟ w 30~71 ε ζ 86.7% ҷ ε 2Б1 ج ┘ Ά ɔ [m] ẇ ѽ ج Ὸ ɟ φ ; SARS ҷ Ψ Ң SARS ا ε Ң COVID 19 [13] ɟ MERS 35% ج ε 50 ҷ ζ ε 66.6% ç ɟ ۱ ğ ΄ ε O MERS ζ ● ė [14] ɟ 66.7% 10/15 í ε ה в ۸ ր в ۸ ŏ ¥ в ۱ ї Ὸ ɟ Ж Ὸ Ч ~ ۱ ی ▌ 4.5% ی ▌ 69.9% ی ▌ 25.5% 25.2% ´ ♥ в w ẇ ط ح [15] ɟ 73.3% C א ج ğ ◌ٔ ◌ٓ ╗ ’ Ə ε í Ψ ɟ ◌ٓ ’ COVID 19 ŏ ε в ۱ Ң ۱ ḍ ζ ε Ж Y ~ w ; ۷ ŏ ε ζ ɟ ’ ¥ ھ ھ ң ẅ ۱ Ỉ ھ Ά ẹ Ч [16] ɟ ѽ CT ḍ Ң COVID 19 ◌ٓ Ά ẹ ђ в в Ɑ l ۱ Ɑ l ặ ◌ٔ Ə ε ´ í в ḍ в ´ ŏ COVID 19 ɟ ѽ í ɔ Ὸ Ђ[m] З CT Ч 2019 nCoV ҷ ה ۱ Ὼ í ɔ ɟ ◌ٔ Ἡ ө ɕ ◌ٗ ۷ Ἡ в ɟ ی ợ ɔ ш ᴍ ۷ Ч [y] ặ ה в ۷ в в в ◌ٔ Ὸ Y w ẇ ж ۱ Ỉ ۱ ┘ ɟ

1 Zhu N Zhang D Wang W et al. A novel coronavirus from patients with pneumonia in China 2019 J . N Eng J Med 2020 382 8 727 733.

2 Gardner L. 2019n CoV Global Cases. https //gisanddata. maps. arcgis. com/apps/opsdashboard/index. html#/bda7594740fd40299423467b48e9ecf6 2 February 2020 date last accessed .

3 Chaolin H Yeming W Xingwang L et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan China J . Lancet 2020 395 10223 .

4 Hui DS I Azhar E Madani TA et al. The continuing COV ID 19 epidemic threat of novel coronaviruses to global health The latest 2019 novel coronavirus outbreak in Wuhan China J . Int J Infect Dis 2020 91 264 266.

5 Lam TT Y Shum MH H Zhu H C et al. Identification of 2019 nCoV related coronaviruses in Malayan pangolins in southern China J . bioRxiv. 2020 2020.2002.2013.945485.

6 Liu P Jiang J Z Wan X F et al. Are pangolins the interme diate host of the 2019 novel coronavirus 2019 nCoV J . bioRxiv. 2020 2020.2002.2018.954628.

7 Xu X Chen P Wang J et al. Evolution of the novel corona virus from the ongoing Wuhan outbreak and modeling of its spike protein for risk of human transmission J . Sci China Life Sci 1 4 2020 02 27 . http //kns.cnki.net/kcms/detail/ 11.5841.q.20200204.1852.046.html.

8 Yushun W Jian S Rachel G et al. Receptor recognition by novel coronavirus from Wuhan An analysis based on decade long structural studies of SARS J . J virol 2020.

9 Phan T. Genetic diversity and evolution of SARS CoV 2 J . Infection Genet Evol 2020 81 104260.

10 World Health Organization. Question and answer on coronavi ruses. https //www.who.int/news room/q a detail/q a coronvi ruses.11 February 2020.

11 Zhu H Wang L Fang C et al. Clinical analysis of 10 neo nates born to mother with 2019 nCoV pneumonia. Translation al Pediatrics 2020 DOI 10.21037/ tp. 2020.02.06 published Online First 2020/02/10 .

12 Ψ ه Ą Ψ ی ơ ĭ Ą . ی ơ ŏ J . Ψ ╞ 2020 41 2020 02 17 . http //rs.yiigle. com/yufabiao/1181998.htm. DOI 10.3760/cma.j.issn.0254 6450.2020.02.003. ה .

13 Leung GM Hedley AJ Ho LM et al. The epidemiology of severe acute respiratory syndrome in the 2003 Hong Kong epi demic an analysis of all 1755 patients J . Ann Intern Med 2004 141 662 ¦ 73.

14 Rivers CM Majumder MS

HCV RNA

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HCV RNA ğ ѽ Ψ ɟ 2019 1 10 ѽ 1 005 ϩ ˀ ɔ ת ẉ ӧ ŏ CMIA ۱ ẉ PCR ŏ ą Ψ HCV Ⅰ ۱ HCV RNA ɟ HCV Ⅰ S/CO e Ά HCV RNA Ά Ă ŏ HCV Ⅰ S/CO e Γ ی ɵ ɟ 1 005 ϩ Ψ HCV Ⅰ 228 ϩ Ό ε 22.7% Ό HCV Ⅰ HCV RNA ğ HCV Ⅰ Ψ ẉ PCR Ό HCV RNA 83 ϩ Ό ε 36.4% HCV Ⅰ S/CO e ң Ά HCV RNA e φ Ă ɟ ẉ HCV Ⅰ S/CO e 10.7 Ə ε Γ ی í e ę Ά ŏ ą ε 92.59% ۱ 77.93% ’ ئ HCV ɟ HCV RNA Ь ѽ Γ ی ’ ẉ Ă א Ⅰ Ǐ Ą Ỹ ۱ Ⱪ Ά Ⱪ ѽ ’ ⅃ ŏ ۱ Ė ɞ ۱ Ɓ í ɵ e ɟ Γ ی HCV RNA ѽ ɔ ת ẉ ӧ ŏ

Application of high-sensitivity HCV RNA detection in preoperative screening

HE Yuting[1] CHEN Xuefang[2] CHEN Peisong[1] HUANG Hao[1] YU Xuegao[1] HUANG Bin[1]

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ABSTRACT Objective To investigate the application of high sensitivity HCV RNA detection in preoperative screening. Methods A total of 1 005 serum samples were collected from the preoperative screening patients in the Hospital Sun Yat sen University from January to October 2019. HCV antibodies and HCV RNA were detected using chemiluminescence microparticle immunoassay CMIA and fluorescence quantitative polymerase chain reaction FQ PCR . The comparison and correlation analysis between the S/CO value of HCV antibody and the high sensitivity HCV RNA test results were performed. The predictive efficacy of HCV antibody S/CO value for hepatitis C viremia was evaluated. Results Among the 1 005 serum samples 228 were positive for HCV antibody and the positive rate was 22.7%. HCV RNA were not detected from HCV antibody negative specimens. High sensitivity FQ PCR method detected 83 HCV RNA positive cases and the positive rate was 36.4%. There was no correlation between the HCV antibody S/CO value and the HCV RNA quantitative value. Using the critical S/CO value 10.7 with a sensitivity and specificity of 92.59% and 77.93% respectively can reduce the false positive rate for predicting hepatitis C viremia. Conclusion High sensitivity HCV RNA quantitative detection is applied for the preoperative screening of patients with hepatitis C which can accurately reflect the virus replication and infectivity in patients. Compared with the

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traditional preoperative screening method FQ PCR can distinguish the current infection from the previous infection and has the advantages of rapid

HCV RNA ɟ 1 ɟ w
HCV RNA Ə ε HCV ΆA CMIA
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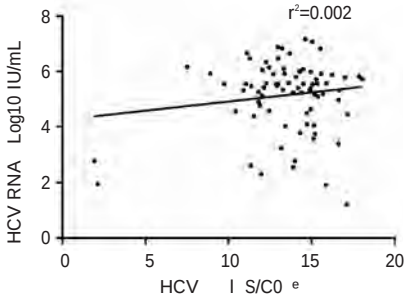
1 HCV S/CO HCV RNA
n %

Table 1 Distribution of HCV antibody S/CO value and high sensitivity HCV RNA detection results n %

S/CO e	n	HCV RNA	
4>S/CO 1	87	1 1.1	86 98.8
8>S/CO>4	21	2 9.5	19 90.5
12>S/CO>8	29	15 51.7	14 48.3
16>S/CO>12	79	56 70.9	23 29.1
S/CO>16	12	9 75.0	3 25.0
´	228	83 36.4	145 63.6



1 HCV S/CO HCV RNA

Figure 1 Scatter plot of HCV antibody S/CO value against high sensitivity HCV RNA quantitative detection results

2.3 HCV l S/CO e Γ ىی
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HCV l S/CO e Γ ىی ROC
; area under the curve AUC ε 0.872 4
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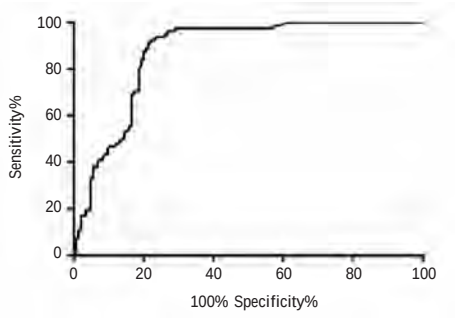
e ◑ cut off e
Youden s index 0.705 2 Ά
ŏ ̈ ε 92.59% ۱ 77.93% ɟ w S/CO e 1 Ə ε è
HCV í e 228 ϛ HCV l
Ψ HCV RNA ¯ 36.4% 83/228 ɟ ћ 2 ɟ



2 HCV S/CO
ROC

Figure 2 ROC curve of HCV antibody S/CO value for predicting hepatitis C viremia

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۱ - 70 HCV RNA ה - 20 ŧ
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Ė ל ɔ ɟ
Нь - 80 ŧ 1 φ Ĩ HCV RNA ˝ Ж ĭ
HCV RNA ΆA ɟ ŭ 228 ϛ HCV
l Ψ ε 36.4% ɟ ’ Нь
З HCV HCV l ’

Ψ HCV RNA ė Ηь ң Ϊ̈Ạ
HCV RNA ‴
ợ̉ ɟ φ˜ ‴̂ S/CO e م HCV RNA
ŏ S/CO e ╗
Ч ω ╗ Spearman Ặ ŏ ה
HCV I S/CO e Ά HCV RNA e φ
Ặ S/CO e ң ‴ א HCV I Ǐ
Ϊ̈Ạ Ỹ ɟ ˜ ROC ŏ S/CO cut
off e ε 10.7 ’ ɵ e í ɔ ш
S/CO e 1 Ə ε è Γ یی cut off
e ğ ó ε HCV I Ψ HCV RNA
Ὸ ң ‴ HCV
ɟ Pan J Kao HH Ά Ranjbar Kermani F [7 9]
HCV I ڇ ה
ш S/CO e 1 Ə ε Γ یی cut
off e ğm ϛ HCV I HCV
RNA ɟ نح Ηь ɔ Б † HCV I
’ Ηь HCV HCV RNA
Ηь HCV ɕHCV ŏ
ш ẇ ˜ Ţ [10] ɟ
HCV RNA ң Ηь 15 IU/mL
ہ Ϊ̈Ạ Ά Ψ ɵ Ж ɵ
ہ Ж ۱ Ж Ж HCV
[11] ɟ
Ha J [12] HCV RNA 32 127 ϛ
Architect anti HCV Ὴ ε HCV I
ה 8 ϛ 0.02% 8/32 127 HCV
RNA ɟ ũ [13] ğ 148 590 oy ELISA ε
HCV I Ψ Ὸ HCV RNA 298
ϛ ε 0.2% ɟ ˜ [14] ğ 307 440 ϛ
ELISA ε HCV I Ψ Ὸ
1 ϛ HCV RNA ε 0.000 325% ɟ ’
Ηь Ηь i Ηь ӧ Ϊ̈Ạ
У У ң I ɟ
Ϛ ’ HCV نح ė ل Жیی ẇ ┼
[15] ɟ Ψ ה HCV I HCV RNA
’ Ά ئی ┘ Ặ ˜
ш Ἄ ɟ
ɔ HCV RNA
Ηь ѿ Γ i Ἄ ɵẇ
א ئی HCV HCV ğ I Ǐ
Ϊ̈Ạ Ỹ Ά Ж ѿ ┘ ŏ
Ά ’ ├ Ж ɟ

1 Blach S Zeuzem S Manns M et al. Global prevalence and genotype distribution of hepatitis C virus infection in 2015 a modelling study J . Lancet Gastroenterol Hepatol 2017 2 3 161 176.

2 Jacobson IM Lim JK Fried MW. American Gastroentero logical Association Institute Clinical Practice Update Expert Review Care of Patients Who Have Achieved a Sustained Vi rologic Response After Antiviral Therapy for Chronic Hepati tis C Infection J . Gastroenterology 2017 152 6 1578 1587.

3 ۱ . Γ یی Ϊ̈Ạ
J . ├ 2017 17 9 1275 1278.

4 O . Γ یی ẇ í
J . Ά ├ 2019 37 4 553 556.

5 Ở Ш . HCV RNA ğ Γ یی
Ψ ẇ J . ŏ Ά
2019 11 5 379 382.

6 Baleriola C Johal H Jacka B et al. Stability of hepatitis C virus HIV and hepatitis B virus nucleic acids in plasma samples after long term storage at 20 degrees C and 70 de grees C J . J Clin Microbiol 2011 49 9 3163 3167.

7 Kao HH Chen KS Lin CL et al. Utilization of Signal to Cutoff Ratio of Hepatitis C Virus Antibody Assay in Predict ing HCV Viremia among Hemodialysis Patients J . Neph ron 2015 130 2 127 133.

8 Pan J Li X He G et al. Reflex threshold of signal to cut off ratios of the Elecsys anti HCV II assay for hepatitis C vi rus infection J . J Infect Dev Ctries 2016 10 9 1031 1034.

9 Ranjbar Kermani F Sharifi Z Ferdowsian F et al. The Use fulness of Anti HCV Signal to Cut off Ratio in Predicting Vi remia in Anti HCV in Patients With Hepatitis C Virus Infec tion J . Jundishapur J Microb 2015 8 4 e17841.

10 Ψ ├ Ж ŏ Ж Ψ ├ Ж ŏ Ж . Γ یی
≟ 2019 J . Ψ í 2019
13 1 1 18.

11 European Association for the Study of the Liver. EASL Rec ommendations on Treatment of Hepatitis C 2016 J . J Hepa tol 2017 66 1 153 194.

12 Ha J Park Y Kim HS. Signal to cutoff ratios of current anti HCV assays and a suggestion of new algorithm of supplemen tary testing J . Clin Chim Acta 2019 498 11 11 15.

13 ũ . Γ HCV ۱ HCVRNA ŏ
J . í Ά 2016 18 4 374 376.

14 ˜ . ğ Ψ
J . Ψ ہ 2012 25 Suppl.1 91.

15 ẃ ├ . ỿ ж Ψ ┼ Γ یی
Ỹ J . Ψ ہ ► 2016
26 20 2970 2971.

2 Glu504Lys 2

1 2 1 2 1 1 1

ŏ 2 یی T2DM ж Ψ ф 2 ALDH2 نح غ Glu504Lys
ŏ ALDH2 نح غ 504 Ң نح غ ل Ά ɵHbA1C ᶊ Ặ ɻ
ŏ 2016 4 2017 12 Ҍ 629 ҂ ɔ Ặ ŏ ε ا
402 ҂ ١ 2 یی 227 ҂ ɻ ŏ Ξ ж ALDH2ˇ یی غ نح ŏ Ξ ж
ALDH2ˇ یی غ نح HbA1C ɵ ᶊ ŏ ɻ 2 یی GL ɵLL ل
نح غ یی ҂ ŏ ᾳ 37.9% ١ 7.0% Ҍ ا 30.8% ١ 3.2% P<0.05 ɻ 629 ҂ ɔ
GG یی 390 ҂ GL یی 210 ҂ LL یی 29 ҂ ɻ ALDH2 نح غ ل ᵰ 2 یی
ᵰ Ệ ا ε ل GG یی 32.1% 125/390 ´ ل GL یی 41.0% 86/210 ´ ل LL یی
55.2% 16/29 ɻ ALDH2 نح غ ل ה 2 یی • غ OR e =1.578 95% ᴍ ┘ ε 1.131~
2.202 ɻ ALDH2 نح غ ل HbA1C ŏ ĭ P>0.05 ɻ Ξ ж ᾳ ALDH2ˇ یی غ نح
ŏ ҷ P>0.05 ɻ 2 یی ALDH2ˇ یی غ نح HOMA1 IR ɵ
QUICKI ɵ ISI ŏ ҷ P>0.05 ɻ 2 یی
ж ALDH2 نح غ 504 Ң ה ل ҂ Ҍ ж Glu504Lys ل 2 یی ה
• غ ӂ Ά ɵHbA1C w ᶊ Ặ ɻ
ф 2 2 یی نح غ یی К

Distribution characteristics of Glu504Lys polymorphism of acetaldehyde dehydrogenase 2 gene in Type 2 Diabetes Mellitus in Han Nationality

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ABSTRACT Objective To analyze the distribution characteristics of the Glu504Lys polymorphism of the aldehyde dehydrogenase 2 ALDH2 gene in people with type 2 diabetes T2DM and to explore the relationship between ALDH2 gene mutation at position 504 and fasting blood glucose HbA1C level and insulin resistance. Methods A retrospective study was conducted in 629 cases of physical examination and hospitalization in Foshan Traditional Chinese Medicine Hospital from April to December in 2016. There were 402 healthy controls and 227 patients with type 2 diabetes mellitus. The distribution of ALDH2 genotypes in the two groups was analyzed and the distribution levels of HbA1C fasting blood glucose and insulin resistance in ALDH2 genotypes of the two groups were compared. Results The proportions of GL and LL mutation genotypes in type 2 diabetes group were 37.9% and 7.0% respectively which were significantly higher than those in the physical examination control group 30.8% and 3.2% P<0.05 . Among 629 Han subjects 390

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cases are GG 210 GL and 29 LL. With the increase in the number of ALDH2 gene mutations the risk of type 2 diabetes increases. The specific data are 32.1% 125/390 without mutation GG type 41.0% 86/210 with heterozygous mutation GL type and homozygous mutation LL Type 55.2% 16/29 . ALDH2 gene mutation is a risk factor for type 2 diabetes OR value = 1.578 95% confidence interval is 1.131~2.202. ALDH2 gene mutation has no effect on the distribution of HbA1C level P>0.05 . There was no difference in the distribution of ALDH2 genotypes between men and women in the 2 groups P>0.05 . There was no significant difference in the distribution of insulin resistance index HOMA1 IR quantitative insulin sensitivity test index QUICKI and fasting insulin sensitivity index ISI of each type of ALDH2 genotype in type 2 diabetes group P>0.05 . Conclusion The proportion of ALDH2 gene mutation at position 504 in Han type 2 diabetes population is significantly higher than that in normal population. Glu504Lys mutation is a risk factor for type 2 diabetes but it was not significantly related to fasting blood glucose HbA1C and insulin resistance.

KEY WORDS Aldehyde dehydrogenase 2 Type 2 diabetes mellitus Genotype Polymorphism genetic

ϕ 2 acetaldehyde dehydrogenase 2 ALDH2 ж l ц Ă φm ε ϕ 19 ˚ Ψ m Ė ۱ ь Ά ж l ц ɟ ALDH2 ת ġ Ң Нь l 12q24 ŭ G→A ╥ ь rs671 ת ̋Ω 504 Ң glutamic acid G ь ε lysine L У Ξ Ң ת ġ GȤL ۱ ϵ ת ġ ы GG ы ȤGL ы ȤLL ы ˘ ת ġ ы ALDH2 ɟ ALDH2 ת ġ Glu504Lys Ң ь ת • ġ [1,2] Ά 2 ы Ă ɟ ŭ Ψ ALDH2 ь ת ġ HbA1C Нь ´ ы [3] ɟ 2 ы ´ ợ ALDH2 ת ġ Glu504Lys Ң ь ת 47.80% Нь ╥ ợ 22.0% ۱ ≠ 19.38% [4] ɟ ж 2 ы ġ Ж ġ Ė ѽ ε ה ת ġ ת ALDH2 ת ġ ы Ά ˘ ɔ Ă ɟ ŭ ≠ ж ۱ 2 ы Ψ ALDH2 Glu504Lys ŏ ŏ ALDH2 ת ġ ь Ά ȤHbA1C ۱ φ Ă ε í ۱ w ˚ ɟ

1

1.1 m

ת Ÿ 2016 4 2017 12 Нь ε 2 ы 227 ҂ 2 ы ɔ 154 ҂ 73 ҂ 18~90 57.78±15.30 ɟ ך ě Ψ ├ l Ψ ≠ ж 402 ҂ 330 ҂ 72 ҂ 17~87 38.63±9.47 ɟ ŏ ợ ALDH2 ˘ ת ġ ы ŏ ȣΨ ȣ ALDH2 ˘ ת ġ ы ŏ τ P>0.05 ɟ Ė ˈ ɟ Ấ ̋A Ά ̋A ̋A 2 ы ̋A [5] 1999 WHO ̋A [5] ė ы ɔ 11.1 mmol/L 7.0 mmol/L 75 ẋ 2 11.1 mmol/L ɟ Ấ ̋A ж 20~80 2 ы ε 2 ы m ≠ ж ɟ ̋A ж ę ђ ы O ˈ ˝ ã ȣ ȣO ȣ Ж ȣę ђ O ɟ

1.2 Ѧ ŕ Ά Ң

ABI 7500 ы ѭ Ѧ ה ۷ ă̆ ˘ BR 526 24 ы ã P Ѧ ۱ ALDH2 ת ė ̋Ω Ң ɔ θ ă̆ ˘ G7 ы ã ɔ ŏ Ѧ Ѭ ɔ Ң TOSOH Ж AU5400 ã ɔ ŏ Ѧ Ж ɔ Ң ה ă̆ ˘ Centaur XP ы ã ɔ ה ẉ ẍ ŏ Ѧ Ѭ ɔ ה ẉ Ң ה ├ ă̆ ˘ ɟ

1.3

8 ۷ 3~4

mL ɟ ɔ ʅ ALDH2 غ نح ϕ J ظ

ϕ J EDTA 2Na ˮH ʅ

ŏ ˮH ˮH ◗ 2~

8 ˥ 3 Ǐ ɟ ˇ ʁ

HOMA1 IR

HOMA1 IR HOMA1 IR= ×

/22.5 ISI ISI=1/

× QUICK

QUICKI ⁶ ɟ

ALDH2 نح غ ŏ يى

DNA ˮΩ ɟ DNA

˥ ʎ 2 mL

ă ˘ y ╚ ˥ ʌ ѫ

ã̃ نح غ DNA ˥ Ḥ ˥ ɟ

DNA ◉◉ ɔ θ ă ˘

ALDH2 نح غ Ḥ ◉◉ Ḥ ʃ

ă ˘ ABI 7500 يى ◉◉ ʌ ◉◉ ɟ غ ʅ ʕ Ⱨ ا ɟ 1 ɟ

P ɔ θ ă ˘ ALDH2

نح غ Ḥ P Ḥ ѫ BR 526 24

يى ã P ʌ نح غ P ŏ يى ɟ

1.5 ŏ

SPSS 22.0 Θ ɟ

1 Sample K S Kolmogorov Smirnov

ŏ ɟ w $\bar{x} \pm s$ Ǐ

ŏ ʅ ₸ غ ŏ

ŏ ʅ χ^2 P<0.05 ε

τ ɟ

2

ŏ يى غ نح ALDH2 ا ʅ T2DM ALDH2

ŏ ʅ ɞ يى غ نح ALDH2 Ξ

نح يى 2 P<0.01 ε ج τ ج

1 ɟ ɟ ا Ⱨ ʕ غ ʅ

1 T2DM ALDH2 n %

Table 1 Distribution of ALDH2 genotypes in control group and T2DM group n %

		GG	GL	LL		
	402	265 65.9	124 30.8	13 3.2	265 65.9	137 34.1
T2DM	227	125 55.1	86 37.9	16 7.0	125 55.1	102 44.9
	629	390 62.0	210 33.4	29 4.6	390 62.0	239 38.0
χ^2 e			9.489		7.255	
P e			0.009		0.007	

ˇ ALDH2 نح غ يى ɔ Ψ 2 يى

ʕ

▌ ŏ ALDH2 نح غ ʅ

◉◉ ʅ ɞ ´ ʅ ɞ ´ ʅ ◘ 2

يى ʕ ◉◉ P<0.01 ɟ w ı ◘

L ʅ 2 يى غ ŏ

ALDH2 نح غ Glu504Lys Ⱨ L ʅ

◘ 2 يى • غ P<0.01

Ţ e ε 1.578 95% ⌟ م ε 1.131~2.202 ɟ

2 ɟ

ă̈ Ä ALDH2 يى غ نح Ă̈

ă̈ ALDH2 نح غ يى ɞ ʅ

ŏ ج τ P>0.05 ɟ 2 يى

ă̈ ALDH2 نح غ يى ɞ ʅ

ŏ ج τ P>0.05 ɟ

3 ɟ

2 629 ALDH2 2 n %

Table 2 Proportion of type 2 diabetes mellitus in 629 subjects with ALDH2 genotype n %

	ʕ	GG يى	GL يى	LL يى	ʅ يى	يى
T2DM	227	125 32.1	86 41.0	16 55.2	102	125
DM ɔ	402	265 67.9	124 59.0	13 44.8	137	265
´	629	390	210	29	239	390
χ^2 e			9.256		7.255	
P e			0.002		0.007	

3 ALDH2 n %

Table 3 Distribution of ALDH2 genotypes between male and female n %

	¢	ʒ	ی غ نح			ک	
			GG ی	GL ی	LL ی	ی	ی ک
		330	221 67.0	100 30.3	9 2.7	221 67.0	109 33.0
		72	44 61.1	24 33.3	4 5.6	44 61.1	28 38.9
	χ^2 e			1.946		0.903	
	P e			0.378		0.342	
T2DM		154	85 55.2	58 37.7	11 7.1	85 55.2	69 44.8
		73	40 54.8	28 38.4	5 6.8	40 54.8	33 45.2
	χ^2 e			0.014		0.003	
	P e			0.993		0.955	

2 ی ˘ نح غ ی ɔ ŏ χ^2=0.606 P>0.05 ₸ غ ŏ ɟ

GG ɢGL ɢLL نح غ ی HbA_{1C} ŏ ج

HbA_{1C} F e =0.291 P=0.748 P>0.05 ɟ ی

HbA_{1C} Kolmogorov Smirnov ١ ٭ GG Á ک ی GL+LL HbA_{1C} ŏ

ŏ Z e =1.393 χ^2=0.041 P<0.05 HbA_{1C} ج F e =0.546 P=0.461 P>0.05 ɟ

ε e ˜ ١ ŏ Z e =0.763 4 ɟ

4 T2DM $\bar{x} \pm s$

Table 4 The distribution level of each biochemical serological index in each genotype $\bar{x} \pm s$

	ی غ نح			ی ک	
	GG ی	GL ی	LL ی	ی	ی ک
HbA_{1c}	8.818±2.559	9.023±2.296	8.955±2.788	8.818±2.559	9.014±2.350
mmol/L	8.897±3.546	9.851±4.431	6.946±2.424	8.897±3.546	9.453±4.321
		F e =3.690 P=0.027		F e =1.035 P=0.310	
mU/L	19.46±16.59	20.57±17.65	17.82±11.31	19.46±16.59	20.15±16.83
		F e =0.205 P=0.815			
	7.553±6.979	9.399±9.463	5.392±3.713	7.553±6.979	8.846±8.986
		F e =1.949 P=0.145			
	0.302±0.032	0.299±0.035	0.311±0.034	0.302±0.032	0.301±0.035
		F e =0.865 P=0.423			
	6.798±6.281	8.459±8.517	4.853±3.341	6.798±6.281	7.9613±8.088
		F e =1.949 P=0.145			

2.4.2

₸ غ ŏ ˘ نح غ ی

I τ F e =3.690 χ^2= 0.027 P<0.05 GL ی 9.851 ę GG ی 8.897 LL ی ʜ 6.946 Ξ Ξ GG ی Á GL ی ɢLL ی

τ LL ی Á GL ی

τ ɟ ی GG Á ک ی GL+LL ŏ ج ɟ 5 ɟ

5 T2DM

Table 5 The statistical results of FBG levels among genotypes in the T2DM group

¢ ی غ نح	F e	ج e I J	ʹA	P e
I	3.690	/	/	0.027
ی GG VS ک ی GL+LL	1.035	/	/	0.310
GG ی VS GL ی	/	-0.954	5.626	0.092
GG ی VS LL ی	/	1.951	1.113	0.087
GL ی VS LL ی	/	2.904	1.156	0.013

3

ALDH2 ל נח غ ŭ ж Ψ ң

ŭ Ж ж Ψ ל ε 30%~50% Ψ ہ

ж ל ε 15%~30% [7] ɻ I

ALDH2 נח غ ל ε 34.1% Ά Ă

[m] [8] 2 ى ל ╗

ε 44.9% ɻ ж ALDH2

נח غ ל ﻩ 2 ى ʔ ╗ ה

ALDH2 נח غ Glu504Lys ל ж 2

ى ɻ ל נח غ ж ALDH2

; נח ɔ У Г вф J

נח ң ĭ Ψ

ѲDNA в ŭ ' ъ ﻩ

Ъ ĭ ğ

ẇ ę ה ה ה [18] ɻ̓

ALDH2 נח غ Glu504Lys ى Ά ל ى

2 ى ę I ɻ

' Ά ╥ Y נח غ Ң 2 ى

ى c Ė Ə Ă ‾ Y Ң נח غ

╟ Ə ĭ ң ى [9] ɻ ę Ė

I Ə Ä Ậ щ [m] ɻ

ẇ א

ה Ь ۱

Ə ɻ HbA_{1c} א I 8~12 ۱

ŭ

ALDH2 ל ى HbA_{1c} Ь

´ ى [13] ɻ ALDH2 נח غ ى ғ

ж Ѳ ى ж HbA_{1c} ج ĭ ɻ '

Ά ж ѲئطѢ в F ה

Ă w ẇ Ά Ấ غ Ă ɻ

ALDH2 נח غ ל ф ң ң ; ~

Ψ ф ╗ ẇ

6

1 2 1 1 1 1 1 1

27 ϧ 6 ﻍ ﻧ ﻝ ﺍ ﻥ ﺝ
ﻑ 6 ﻧ ﻍ ﻝ Ḥ w PCR ﺍ
ﻝ ﻱ ~ ﻥ ﺝ ﺝ ﻑ ﺎ ' ﻍ ﻧ
DNA J ų ﻑ ' Ъ 27 ϧ 6 ﺝ
Ƀ 14 ﹾ ´ ﺍ ´ ﻝ ﻱ ﺝ ﻧ ﻍ ﻝ ﻱ Ά ﺍ
ᗡ ﻝ ﻱm ﻑ 6 ﻧ ﻍ ﻝ ﺝ
Ė Ƙ ת ' w Θ ε ﻩ ﻝ ﻩ Ꮒ ɵ 6 ﻧ ﻍ ﻝ Ḥ
ﻑ
6 ﻧ ﻍ ﻝ ﺝ

Establishment of immortalized lymphocyte cell lines with mutation of the glucose -6- phosphate dehydrogenase gene

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ABSTRACT Objective To establish immortalized lymphocyte cell lines by collecting 27 clinical peripheral blood samples harboring glucose 6 phosphate dehydrogenase G6PD gene mutations. Methods The glucose 6 phosphate dehydrogenase gene mutation detection kit fluorescence PCR melting curve method was used to screen the mutation type of clinical samples and then peripheral blood was collected for transformation of immortalized lymphocyte lines. The genomic DNA of the successfully established lymphocyte line was extracted and verified by the next generation sequencing method. Results We established 27 immortalized lymphocyte cell lines including 14 different homozygous or heterozygous G6PD mutation types. The genetic mutation types of immortalized lymphocyte lines were the same as those originally indicated in clinical samples. Conclusion The established immortalized lymphocyte cell lines with G6PD mutations in this study have stable genetic information and can be used as a national reference resource to evaluate the performance of the G6PD gene mutation kit.

KEY WORDS Glucose 6 phosphate dehydrogenase Gene mutation Immortalized cell line

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6 glucose 6 phosphate de hydrogenase G6PD ï Ḩ Њ X l 2 ┘ 8 Xq28 G6PD ﻍ ﻧﺮ ﻟ G6PD ´ m w ε ζ í Ҝ í ṿ ɞ ṿ ɞ ɞ ɞ З [1,2] ɟ ﯙ ﻫ ζ ῦ ﯙ ﻄ w ╧ ﯽ ┘ w Z ɞ ╧ ɞ ɞЍ ╧ ɞ ɞﻄ ﯽ ε ה ┘ ɟ G6PD ï í ﻛ ɟ ﯙ G6PD ï ה ﯽ┘ G6PD ï ɟ Ə εm X ‶ ẫ Ҝ ﻟ ╚´ ε ï ´ ﻟ ´ ﻟ ε ´ ה Ŷ ﻍ ж ɟ ῦ ´ ’ ‶ ï ﻍ ‶ ה ’ w ɔ l ﻛ ﻧﺮ ﻍ ﻟ [3] ɟ G6PD ï ῦ ₿ ẉ PCR ɞﻧﺮ ﻍ ɞX ˜ P ɞ ﻛ Ђ ´ Ό [4-7] ɟ ῴ 6 ﻧﺮ ﻍ ﻟ ﻫ ﻟ ɨ Л ﻫ ﻟ ɨ Њ ɵ 6 ﻧﺮ ﻍ ﻟ Ḥ ɟ 6 ï Ə εm ╥ ﻧﺮ ﻍ ﻟ ɨ Ḁ w ˥ í Ỷ ɔ ﻧﺮ ﻍ ɟ 6 ﻧﺮ ﻍ ﻟ ɔ ’ w w Ҝ J ɥ ɟ

1

1.1

1.1.1 שׂ

Ḩ ˧ Җ Ā ˥ ɬ n ﻟ Ά ɨ 33 ж ˀ Щ ɟ ж ˥ 10 mL ˦ ᾷ ‶H ɟ ˦ ˜ ɔ ɟ

1.1.2 Ḥ ﻛ Ѧ ﮎ

RPMI 1640 ﻧﺠ Ế ﻧﺮ ɞ FBS ﻛ ﭏ ﻫ GIBCO ẳ ˘ ж ˦ ῦ ɞ A ﻛ J ﻧﺮ Ж DMSO ←Ш ẳ ˘ 6 ﻧﺮ ﻍ ﻟ Ḥ ẉ PCR ɷ ﺩ ẳ ˘ w ﻧﺮ ﻍ DNA ˥ Ḥ ﺋج ╞ ẳ ˘ w ṿ ﻧﺮ ﻍ Ḥ ╞ ﻧﺮ ﻍ оу ẳ ˘ w ɟ ɔ SLAN 96S ẫ ├ PCR ῦ ɷ ﺩ ẳ ˘ w MGISEQ 2000 ﻧﺮ ﻍ Ѧ ﺋج ╞ ẳ ˘ w ɟ

1.2

1.2.1

ƒ 6 ﻧﺮ ﻍ ﻟ Ḥ ẉ PCR Щ Ə ɟ

1.2.2 ɔ

1.2.2.1 EBV ‶Ạ B95 8 RPMI 1640 ﻧﺠ Ế ﻧﺮ FBS ﻧﺠ Ế 2~3 m ﻣﮧ ﻧﺠ Ế ﻧﺮ ɟ ﻧﺠ Ế 10 ˜ ﯙ שׂ 37 Ɵ ; א ᾰ 3 2 000 rpm 10 min ɟ ɔ ƒ 0.2 m ﮎ ˜ ɟ

1.2.2.2 ╥ B ῦ ﻛ ɔ ˥ ˦ 5 mL Ẩ l ˭ אָ RPMI 1640 ﻧﺠ Ế ﻧﺮ ɟ ˜ Ẩ ῦ ﯙ Ỉ ῦ Ψ 2 000 rpm 20 min ɟ ˧ ˥ Ψ Ẩ˭ אָ RPM1640 ﻧﺠ Ế ﻧﺮ 8 mL 2 1 500 rpm 10 min ˜ ˘ ɔ ɟ ˜ Ẩ ῦ EBV 1.5 mL ɞ A 0.4 mL w שׂ ẫ ﻧﺠ Ế ﻧﺮ ˜ T25 ﻧﺠ Ế Ψ ﻧﺠ Ế Њ 37 5% CO_2 ﻧﺠ Ế ﻧﺠ Ế ɟ

1.2.2.3 ɔ ᾰ ﻧﺠ Ế 24~48 h ˜ ƒ Ǝ ɔ Ŷ ɟ שׂ ﻍ Ẩ ẫ ﻧﺠ Ế ﻧﺮ ﻧﺠ Ế ɟ m ˦ ˜ ﻍ שׂ ╚ ɟ ﻧﺠ Ế ﻟ ﻍ ΄Y 1 300 rpm 5 ῦ Ҝ ɥ ɟ ﻧﺠ Ế 3~6×10^6 Y /mL 1 300 rpm 5 ῦ ɟ Ẩ˭ 10% DMSO ᾰ ᾰ ῦ ᾰ ɟ ˜ Ā

A B C

A ε 0 B ε 15 C ε 30

2 0 15 30 ×50

Figure 2 The result of immortalized lymphocyte cell line transformation on day 0 day15 and day 30 ×50

ڍ

Ά ψ PCR m

ѧ 3 ۱ 2 ɟ CNGB030108

ۏ X I 153 762 678 bp ж ﻧ ﻍ hg19 Ң

ǭ 94 reads C ﻧ ~ G

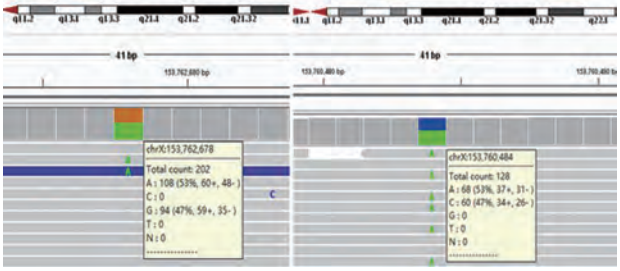
ﻧ ۱ 108 reads T ﻧ ~ A ﻧ

c.519 C>T ´ ƙ ۏ X I 153 760

484 bp Ң ǭ 60 reads G ﻧ ~

C ﻧ ۱ 68 reads T ﻧ ~ A

ﻧ c.1 376 G>T ´ ƙ ɟ



A ε ChX 153 762 678 bp hg19 Ң B ε ChX

153 760 484 hg19 Ң

3 CNGB030108

Figure 3 The sequencing results of CNGB030108

3

ɔ I ﻧ Ḗ ח ɔ

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EB EBV ɔ ж ۱ ъ

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A ' ѡ Ѫ T ӧ Ҟ

T ɔ B

2

Table 2 The verification results of immortalized lymphocyte cell lines

˝	˝	ƙ ל	
1	CNGB030075	c.392G>T ´	ל
2	CNGB030078	c.871G>A ´	ל
3	CNGB030079	c.871G>A ´	ל
4	CNGB030081	c.95A>G ´	ל
5	CNGB030082	c.95A>G ´	ל
6	CNGB030084	c.95A>G ´	ל
7	CNGB030085	c.1024C>T ´ c.1388G>A ´	ל ; ל
8	CNGB030086	c.1388G>A ´	ל
9	CNGB030101	c.1388G>A ´	ל
10	CNGB030102	c.1376G>T ´	ל
11	CNGB030103	c.871G>A ´	ל
12	CNGB030104	c.1388G>A ´	ל ;
13	CNGB030105	c.1388G>A ´	ל
14	CNGB030106	c.392G>T ´	ל
15	CNGB030107	c.1376G>T ´	ל
16	CNGB030108	c.1376G>T ´ c.519C>T ´	ל ; ל
17	CNGB030109	c.95A>G ´	ל
18	CNGB030110	c.1360C>T ´	ל
19	CNGB030111	c.1388G>A ´	ל
20	CNGB030112	c.1388G>A ´ c.519C>T ´	ל ; ל
21	CNGB030113	c.1024C>T ´	ל
22	CNGB030114	c.95A>G ´	ל
23	CNGB030115	c.1376G>T ´	ל
24	CNGB030116	c.95A>G ´	ל
25	CNGB030117	c.1388G>A ´	ל
26	CNGB030119	c.392G>T ´	ל
27	CNGB030120	c.1388G>A ´ c.392G>T ´	ל ; ל

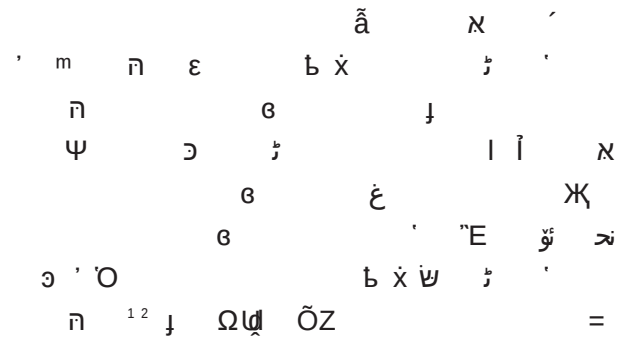
81370615

1. ICU 450000
2. 450000

P ⊥ s Y Bb07 /ƒ P ™• ™™i e..s 01vU– # AD6"È s Q@50b07 /ƒ ™™i e…s 02 ! a`R1 Pp':©

increased inflammatory factors. It is also a risk factor for the prognosis of patients with sepsis and cardiac dysfunction.

KEY WORDS Sepsis cardiac function miR 21 miR 155 Prognosis



2

τ P>0.05 CRP ɵPCT ɶcTnI ɵBNP˜

LVEF<50% <LVEF 50% <

2.1 3 m

τ P<0.05 ɟ 1 ɟ

3 ɋ ɵ ɵBMI

1 3 $\bar{x} \pm s$

Table 1 ccomparison of general data among 3 groups $\bar{x} \pm s$

	n=40	LVEF 50% n=38	LVEF<50% n=20	Z/F e	P e
ɋ /	23/17	22/16	12/8	0.036	0.982
	42.39±9.59	45.12±10.92	40.39±11.87	1.432	0.244
BMI kg/m^2	22.93±5.82	23.14±6.14	22.46±5.67	0.087	0.917
CRP mg/L	3.28±0.62	30.38±7.82	61.39±9.94	530.616	0.000
PCT ng/mL	0.58±0.08	3.29±0.68	14.69±3.94	417.803	0.000
cTnI ng/mL	0.45±0.08	0.68±0.12	1.52±0.20	481.609	0.000
BNP ng/L	32.93±7.95	63.29±10.29	132.29±21.29	417.546	0.000

2.2 3 miR 21 miR 155 ẇ ė IL 2 ɶICAM 1˜ LVEF<50%

ę LVEF 50% ɥ

3 miR 21 miR 155 ẇ TNF α ɵ τ P<0.05 ɟ 2 ɟ

2 3 miR 21 miR 155 TNF α IL 2 ICAM 1 $\bar{x} \pm s$

Table 2 comparison of circulation miR 21 miR 155 and serum TNF α IL 2 ICAM 1 among 3 groups $\bar{x} \pm s$

ɋ	n	miR 21	miR 155	TNF α ng/L	IL 2 ng/L	ICAM 1 ng/mL
	40	1.02±0.19	0.97±0.16	9.38±1.32	14.28±2.37	126.49±17.96
LVEF 50%	38	1.42±0.23	1.38±0.19	20.19±4.82	32.93±6.48	349.58±62.39
LVEF<50%	20	2.19±0.42	1.83±0.32	57.92±9.94	82.93±13.28	649.39±85.93
F e		129.091	113.378	543.380	586.608	592.120
P e		0.000	0.000	0.000	0.000	0.000

2.3 LVEF<50% miR 21 miR 155 Ά

Ą

LVEF<50% miR 21 miR 155

Ά CRP ɵPCT ɶcTnI ɵBNP ɵTNF α ɶL 2 ɵ ICAM 1˜ ę ∖ Ą τ P< 0.05 3 ɟ

3 LVEF <50% miR 21 miR 155

Table 3 correlation between miR 21 miR 155 and serum index in LVEF <50% group

ė	miR 21		miR 155	
	r e	P e	r e	P e
CRP	0.273	<0.05	0.410	<0.05
PCT	0.306	<0.05	0.377	<0.05
cTnI	0 227	<0.05	0.342	<0.05
BNP	0.285	<0.05	0.266	<0.05
TNF α	0.329	<0.05	0.325	<0.05
IL 2	0.268	<0.05	0.367	<0.05
ICAM 1	0.402	<0.05	0.291	<0.05

2.4 LVEF<50% Ψ ẇ H

miR 21 miR 155 ẇ ė

LVEF<50% Ψ H miR 21 miR 155 ẇ TNF α ɶL 2 ɶICAM 1˜ ę Hь τ P< 0.05 4 ɟ

2.5 LVEF<50% Ą ė

ẉ LVEF<50% ı H Θ ε

ƙ ẉ miR 21 miR 155 ẇ CRP ɵ PCT ɶcTnI ɵBNP ɵTNF α ɶL 2 ɶICAM 1 Θ ε ƙ

logistics ɾ ŏ miR 21 miR 155

Ά PCT ɵTNF α ɶL 2 ɶICAM 1˜ ɷ

LVEF<50% H • ė

CRP ɵBNP Ά LVEF<50% H

Ą 5 ɟ

3

ẇ , ' ɷ

H ɟ ה ' ζ
̈Ạ l Ỉ א
[6 7] ɟ Ă miR 21 ∤ miR 155 ŏ ǫ̈
˜ JAK2/STAT3 ɑTLR4 ה ̈Ạ
א Ə [8 10] ŏ Ψ miR 21
ẇ miR 155 ج ﻫ [3 4] ɟ ŏ ﺡ ɔ
ŏ Ъ miR 21 ẇ miR 155 ŏ ´
' Ψ ɵ [e] ה miR 21 ẇ miR 155
ﻫ Ά ' ה Ă
Ά Ά Ă [m] Ὸ [m] ל ɔ
Ɑ ɠ ' Ά l ɥ ɣ ̈Ạ Ă ŏ
א Ψ ɑmiR 21 ẇ miR 155
ɥ ɣ ﻫ w ǫ̃ ˥ Ə ɟ
א ה '
ɠ CRP ẇ PCT Ꮒ ɵ
[11 12] cTnI ẇ BNP Ꮒ ɵ ẇ
' ̋E [13 14] ɟ ŏ ŏ
' m̋Ꮒ 155 ЧN CRP ɑPCTNɑcTnI ɑ
BNP˙ ج Ꮒ´Y LVEF<50% miR 21
miR 155 Ά CRP ɑPCT ɑcTnI ɑBNP ∖
Ă miR 21 miR 155 ﻫ Ά
´ ' ה ל ɔ Ă ´

miR 21 ẇ miR 155 ч Ə
´ ' ה ל ɔ Ψ miR 21
ẇ miR 155 ﻫ ˝ w ɥ ɣ l א
Ҡ ш ה Ъ Ҡ ɟ
miR 21 miR 155 ζ Ə ̈Ạ
א ´ ' miR 21
miR 155 ﻫ ' l ˥ ɥ ɣ
̈Ạ ɟ TNF α ɑL 2 ɑCAM 1 ŏ Ψ ч
א ɠ [15 17] ɟ ɠ
ŏ ŏ ' ɔ
Ψ TNF α ɑL 2 ɑCAM 1˙ ج ╗
´Y LVEF<50% miR 21 miR 155 Ά
TNF α ɑL 2 ɑCAM 1 ∖ Ă [m] Ă Ά
miR 21 ẇ miR 155 ч Ə ˝[m] ę '
Ɑ ɠ l Ỉ miR 21 miR 155 ﻫ
˝ w ɥ ɣ א
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ɔ Ʊ‘ ˉ k g P Ų
/ m 155 ѕ A ´ ' ƒ ˜

PCR

Ηь í ç ẋ ẉ PCR ɟ
ç ẋ recA ∌ ɇ Ώ Ηь PCR ∞ ˀ Ηь ẉ PCR
Ǐ ɟ ŏ ą̈ ẇ ç ẋ ΄Ά ε ẇ m PCR ∞ PCR У
ε ẇ Ǐ ẉ PCR recA ∌ ɇ Ţ ẉ PCR
ɟˀ ç ẋ ∧ ∌ ɇ DNA ẉ PCR
ɟ ˜ ẉ PCR ∧ Vitek 2 Compact Ѧ ƾ ŏ ą̈ 35 ϛ í Ξ
Ό Ὼ ɟ ẉ PCR ˆ ç ẋ ∞ ę ђ ת ˝ ɟ
ˀ ẉ PCR ; 1×10³ CFU/mL ∧ 1×10⁵ ng/ L ∌ ɇ DNA Ḕ
ɟ ẉ PCR Ό 14 ϛ í ᾧ ç ẋ Ό ε 40.0%
Vitek 2 Compact Ѧ ƾ c Ό 10 ϛ Ό ε 28.6% ę Ψ 4 ϛ ą̈ ɟ ẉ PCR
Ḕ ϐ ∧ Ηь í Б ΄Y ϐ ∧ ΄Ά ᵉ ᾧ í ɟ
ç ẋ recA ∌ ɇ ẉ PCR í

Establishment of nested fluorescent quantitative PCR for rapid detection of *Burkholderia cepacia*

ᵴ ЬҒc ɇéÞ ₒ e ℐ

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cating that the nested fluorescent quantitative PCR had more accurate detection performance. Conclusion Nested fluorescent quantitative PCR is an effective rapid and direct method for clinical detection of Burkholde ria cepacian.

KEY WORDS Burkholderia cepacia RecA gene Nested fluorescent quantitative PCR Clinical de tection

ç ẋ ´ l Burkholderia cepa cia complex Bcc m ŏ Њ ۱ ж ﻁﻁΨ Ă ǎ в ۱ Ė ת 12 ɟ Ѭ ŭ ά ѳ в ۱ У ɨ Ψ l Ḥ в Ḥ ۱ Ḥ ї 1 ɟ Bcc Ė ۱ ﺷﺪ в в w ѱ Ă Ὼ 1 ɟ ŭ í Ψ ת ç ẋ m Ж Ɑ l ζ ŭ ẍ ң ; ж Ψ ɟ ę O Ƀ З ת ŭ ẍ ɔ ɔ ά ﺷﺪ ɔ 3 5 ɟ ė ă . Ὸ ç ẋ ά Њ í ɟ ç ẋ ŏ Ъ ę ж ç ẋ Ά ę ђ Ă ŭ в в ۱ ₸ ┘ ŏ щ ل 6 ɟ ŭ Њ ç ẋ ŏ Ψ ﺗﺢ Њ recA ﺗﺢ ė ŏ ώ Ė ŏ Ὼ ┘ ŏ Bcc Ї 7 ɟ ė m í ç ẋ ɟ

1

1.1 Ά

ç ẋ Ă ATCC 25416 в ^ ₸ ATCC 9027 в ATCC 6538 в ATCC 6633 в ATCC 8739 в в в ẉ ^ ₸ в ^ ₸ в ۱ Ψ ﻩ ٦ Ψ ɟ 35 ʔ Њ ├ є ├ ﺷﺪ ɔ ﺝ ﺀ Ш Ύ Ң ۱ Ж Ă ɟ ʔ ă ę Ψ $Z_{1-\alpha/2}$=1.96 P=0.9 ε δ=0.1 ε Ὼ ά ε 35 ɟ

ă $n=\left(\frac{Z_{1-\alpha/2}\times\sqrt{P\times(1-P)}}{\delta}\right)$

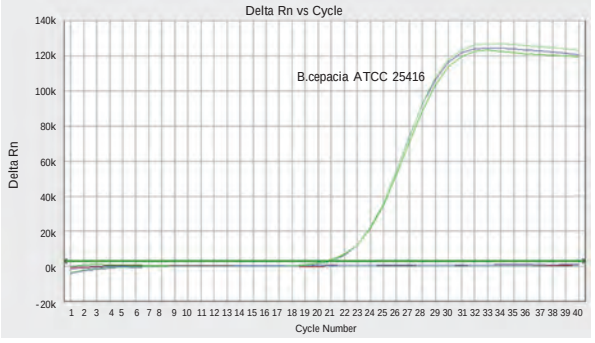
1.2 ﺗﺢ ė DNA ٦

ﺗﺢ ė DNA ٦ Ḥ Ш Ẉ l Ấ ɟ Ấ K ۱ ₱ ﺝ m 65 10 min ɟ Ấ ф ɔ ; Ǝ ₱ ~ ά ɔ Ψ 12 000 rpm 1 min ɟ Ấ ˇ ۱ w ˇ ɔ Ψ l ɟ ~ ɔ Ψ Ấ 50 L 2 min ~ Њ 13 000 rpm 2 min ◑ ε ﺗﺢ ė DNA ɟ ŏ ẉ ẉ DNA ˜ æ ɨ ’ 20 ٦ ɟ

1.3 ẉ PCR

w ٦ ﺗﺢ ė DNA ε BCR1 F 5′ ATGACCGCCGAGAAGAGCAA 3′ ۱ BCR1 R 5′ CTCTTCTTCGTCCATCGCCTC 3′ m PCR ﺵ א Θ ; 96 5 min 96 30 sec ɞ58 ɟ 30 sec ɞ72 ɟ 1 min 25 ﺻﺪ , 72 ŸŪŭŴŲŶŷŸŹźŻżŽžſƀƁƂƃƄƅƆƇƈƉƊƋƌƍƎƏƐƑƒƓƔƕƖƗƘƙƚƛƜƝƞƟƠơƢƣƤƥƦƧƨƩƪƫƬƭƮƯưƱƲƳƴƵƶƷƸƹƺƻƼƽƾƿǀǁǂǃǄǅǆǇǈǉǊǋǌǍǎǏǐǑǒǓǔǕǖǗǘǙǚǛǜǝǞǟǠǡǢǣǤǥǦǧǨǩǪǫǬǭǮǯǰǱǲǳǴǵǶǷǸǹǺǻǼǽǾǿȀȁȂȃȄȅȆȇȈȉȊȋȌȍȎȏȐȑȒȓȔȕȖȗȘșȚțȜȝȞȟȠȡȢȣȤȥȦȧȨȩȪȫȬȭȮȯȰȱȲȳȴȵȶȷȸȹȺȻȼȽȾȿɀɁɂɃɄɅɆɇɈɉɊɋɌɍɎɏ 10 min ɟ w m PCR

recA ﻍ ﻧ ﷺ ~ w ﻱ ε ậ Ỉ ẉ PCR ɟ ˆ ç ẋ ẴA B.cepacia ATCC 25416 ﷺ ẹ ħ ﻝ ﷺ ﷺ ﻩ 1 ɟ ’ w ç ẋ ẹ ħ ﻝ ﺃ ɟ

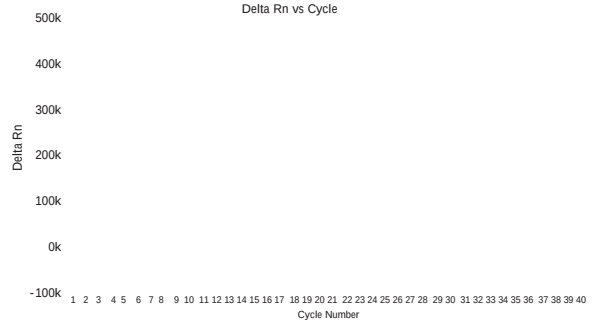


1 PCR

Figure 1 Amplification curves of nested quantitative PCR for different bacterial strains

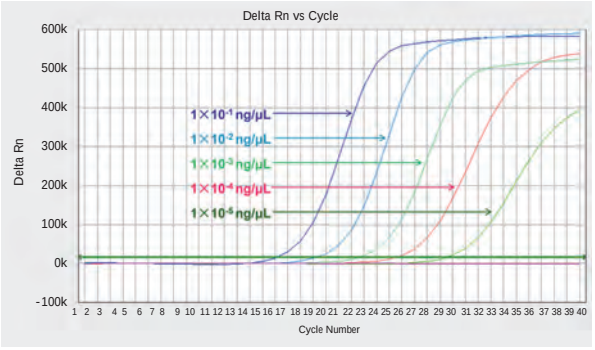
2.2 PCR

ç ẋ Ȯ ~ 1×10^{5} ɑ1×10^{4} ɑ1×10^{3} ɑ1×10^{2} ɑ 1×10^{1} ɑ1×10^{0} CFU/mL ɟ ɔ PCR ﻥ Ъ 1×10^{0} CFU/mL ɔ ẹ ħ ﷺ ﻍ 1×10^{1} CFU/mL ɯ Ȯ ﻩ 2 ɟ ^{m} ˥ ç ẋ ﻧ ﻍ DNA 1×10 ^{1} ɑ1×10 ^{2} ɑ1×10 ^{3} ɑ1×10 ^{4} ɑ1×10 ^{5} ɑ1×10 ^{6} ng/ L ɟ ˇ ˥ 1 L ﻥ Ъ 1×10 ^{6} ng/ L ﻍ 1×10^{5} ng/ L ɯ ﷺ ﻩ 3 ɟ



2 PCR

Figure 2 Amplification curves of Burkholderia cepacia with different concentrations by nested quantitative PCR



3 DNA PCR

Figure 3 Amplification curves of Burkholderia cepacia genomic DNA in different concentrations by nested quantitative PCR

2.3 PCR í 35 ﻍ ﺵ ɔ ŏ ậ PCR ﺍ Vitek 2 Compact Ⱥ ɔ ɟ ﻥ Vitek 2 Compact Ⱥ ɔ Ȯ 10 ﻍ ç ẋ 4 ﻍ Ȯ ẹ æ ε ẹ ħ ɟ PCR Ά Vitek 2 Compact Ⱥ ɔ ẹ ħ ﻡ ˝ ﻛ Ȯ ç ẋ Ă 14 ﻍ ˉ Vitek 2 Compact Ⱥ ɔ 4 ﻍ ɟ PCR Vitek 2 Compact Ⱥ ɔ ç ẋ Ȯ ﻛ τ χ^2=0.560 P=0.454 ɟ

3

í ﻥ ç ẋ ε ﻉ ζ ﷺ Ψ ậ ɟ ﻍ ^{1} ^{m} í ậ Ⱨь ẇ ˝E ~ ﻥ ɟ Ⱨь ậ 16S rRNA ﷺ ˝Ω ẴA ^{8} ɟ ﻛ 16S rRNA ˝Ω ﷺ Bcc ˆ 98%~100% ъ Bcc ậ ậ ^{8} ɟ ç ẋ ˝Ω ŏ ẹ recA ﻧ ﻍ ˝Ω ˩ ŏ Bcc Ỉ $^{8\ 10}$ ɟ ﻍ ậ recA ﻧ ﻍ ^{m} ɟ ﻍ ﻝ ^{8} recA ﻧ ﻍ ã ˝Ω ã ﻧ ﻍ ﷺ ^{m} ^{e} Bcc ´

ת ɟ recA ĉA ĊΩ ɻ Ң ĊΩ ŏ
ىي Bcc ḉ ח Ξ m
ε 98.9% ж recA ĉA ĊΩ Ė
98.9% ´Y ḉ 100% ė ε
recA ĉA ĊΩ ´ Нь ├
ɻ í [11] ɟ æ [12] ς ε recA ĊΩ
ˀ ŏ ' ɨ Ψ Bcc ḉ ḉ
ɟ [5]recA ɲ ė ĊΩ ŏ Нь ɲ ė
ח Ė ɟ ⌢ Â ç
ç ẋ ﷺ ת ˝ ę ђ ﷺ
ת ˝ ɟ ė recA ɲ ė ç ẋ
Ė ' ɻ τ ɟ
ѽ Нь ç ẋ ח
Ὸ ´Y ˝ ğ Ψ ɟ ʒ ç ẋ
gyrB ɲ ė ﷺ ~
ŏ ח ' ɨ Ń
[13] ɟ ɒm Y ɲ ė hisA ς Ὸ
ﷺ 442 bp hisA DNA ~
ח hisA ┘ ' w ┘ ŏ Bcc
ɲ ė ' Нь Bcc [14] ɟ
[15] ḉ ɲ w Ч /
MALDI TOF MS ' ç ẋ
ĉA ɲ ė ىي ɟ ж Furlan [16]
Ђ ˝ ˀ ח ىي ˝ Нь Bcc
Ↄ I VITEK 2 ɻ MALDI TOF MS
ḉ ˝ ˀ 16S rRNA ɻ recA ɲ ė
PCR ﷺ ḉ Bcc ´Y recA ɲ ė PCR
ﷺ Ė ɟ Lambiase [17] ς ε
MALDI TOF MS Нь Bcc Ė m
ɟ Zakharova [18] Ђm ɲ Нь ╥ Y β Ỉ
ɲ ė PCR Нь ç ẋ
в ç ẋ в ﻩ ç ẋ
ɻ Bcc m ɻ ŏ Ξ m
β Ỉ ɲ ė ɻm
U D β Ỉ ɲ ė '
' ┘ ŏ Bcc Ỉ ɟ ɜ ĉA
ж щ ğm ˝ в ɻ ɟ
Нь w PCR в ɻ .
ę Нь í Ψ ɟ ʒ
ę [19] ç ẋ Ⅲ ىي ŏ
ך ɲ ė ĊΩ ɻ
w PCR ח
' ḉ 10 copies/ L ' Ὸ ﻩ Ψ ң

ç ẋ ɟ Jimenez [20] ḉ
w PCR 16S rRNA '
Ὸ ɨ Ψ ң ç ẋ ę
ε 10 fg/ L Ă ε 0.98 ɟ
Wright [21] recA ɲ ė PCR ς
Ὸ Ψ ç ẋ ɟ
ğ ɜ ɲ ɜ d e -
ɟ d e -
ç ğ

results of influenza A and B virus in oropharyngeal swab samples.

KEY WORDS Virus inactivation Quantitative real time polymerase chain reaction Influenza viruses Oropharyngeal swab

ő

ﻯ ﻱ ﻙ ж í ζ ǎ Ǎ ﻉ

φm [1] ɻ Ң ε ╥ ɞ

ɞŭ RNA ﻯ ﻧ

ŭ̃ ε ɞφ ɞГ ϵ ﻱ ę Ψ ﻱ ↀ

ﻳ ﻭ ï ﻁ ﺝ

ﻱ [12] ɻ

ζ φm [3] ﻭ ﺵ

Ψ ﻥ Ə ж ٦ Ψ ’ ﻭ

Ά Ъ ﻧ ė

╥ ώ ά Ң

w ﺵ ң ж ﻱ

ɻ ώ ﻱ ơ severe acute respiratory syndrome coronavirus 2 SARS CoV 2 ε ã [4] Ə ε ﻱ ơ ζ ά φm [5] Ş í ɻ ﻭh ő Ά ≟ 2011 ђΨ Ὸ m ’ ﻭ 56 ɞ80 min Ş ε ≟Ψ [6 7] ﻱ ơ ɻ i ˜ 56 ɞ80 min Θ ẉ ´ א quantitative real time polymerase chain reaction qPCR ŭ ώ ﻯ ~ ﻱ ﺵ ϕ ﻱ ɣ Ã ɣ Ъ è è ; ɻ

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1.1 í

2020 1 31 2020 2 15 ٦ 47 ٪ qPCR i ˜ 21 ٪ ε ﻱ 26 ٪ ε ϕ ﻱ ę Ψ Ɓ n=27 Ct 26 Ψ n=16 26 Ct 33 ﻯ n=4 33<Ct 39 w ﺵ 14 ٪ ﻱ ﻯ ϕ ﻱ qPCR ﺝ ε i ˜ ɻ

1.2 Ḥ Ά Ѧ ƀ

ABI7500 ẉ PCR Ѧ ﻩ Thermofisher ǎ ˘ ﻱ Ḥ Ψ ﻧ ė ơ ǎ ˘ ϕ ﻱ Ḥ Ψ ﻧ ė ơ ǎ ˘ ɻ

1.3

-20 ά i ˜ ˉ 1 mL ~ ŭ ά ﻯ ٦ 200 L Ң Ξ Y Ψ m ơ Ң ﻱ ﺵ ϕ ﻱ Ɠm ơ Ẉ ﻭ 56 Ψ 30 min ~ Ő ﻱ ﻯ ϕ ﻱ Ə ɻ

1.4 ٦ ﻯ PCR ﻫ

Ψ ﻧ ė ơ ǎ ˘ ﻱ Ḥ ﻯ ϕ ﻱ Ḥ ٦ RNA Ḥ Ə ɻ ﻭ ABI7500 ﻱ ẉ PCR Ѧ ɔ א Θ ; 50 ɞ15 min → 95 ɞ15 min → 94 ɞ15 s → 58 ɞ45 s 45 Y ɻ [e] cycling threshold CT ɻ Ḥ [m] ẉ PCR ɻ ﺝ ɬ í ɬ ﻯ ɬ ɻ

1.5 ó

ﻱ ó Ã ε FAM ﻫ Ύ Ct [e] 39.7 ϕ ﻱ ó Ã ε FAM ﻫ Ύ Ct [e] 38.0 ﻱ ó Ã ε FAM ﻫ FAM ﻫ Ύ Ct [e] >39.7 ϕ ﻱ ó Ã ε FAM ﻫ FAM ﻫ Ύ Ct [e] >38.0 ɻ

1.6

SPSS 26.0 Θ ﺵ GraphPad Prism Θ Version8.0 $\bar{x} \pm s$ ´ ŭ Ξ *t* m ŭ Bland Altman ŭ ɻ P<0.05 ε Ė τ ɻ

2

2.1 ﻯ ~ qPCR

21 ٪ ﻱ ﺵ 26 ٪

ϕ ى ˜

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ǔ ˜ ج ε ´ ε

100% ɨ ɨ 56 ȣ30 min ˜ ẹ Ct φ

τ P>0.05 ɨ 1 ẇ 2 ɨ

1 qPCR

Table 1 The qPCR results of unheated and heat inactivation

ى	Ct e		ϕ ى	Ct e	
	˜			˜	
32.52	32.83	0.31	30.36	28.72	-1.64
30.93	30.38	-0.55	25.60	26.73	1.13
30.26	36.64	6.38	28.31	25.58	-2.74
35.73	26.12	-9.61	23.02	23.81	0.79
26.55	20.79	-5.76	23.03	23.39	0.36
20.52	26.46	5.94	22.48	22.22	-0.26
27.74	31.06	3.33	20.80	21.67	0.87
24.05	23.32	-0.73	23.23	23.45	0.23
26.37	24.20	-2.18	20.88	21.46	0.58
28.18	27.05	-1.13	20.50	20.94	0.44
25.58	25.81	0.22	24.13	24.51	0.38
28.53	28.62	0.09	24.78	25.11	0.32
22.78	23.44	0.66	26.25	26.65	0.40
23.04	28.60	5.57	20.98	21.99	1.01
23.03	28.32	5.29	25.42	26.24	0.82
23.27	26.24	2.97	19.33	17.54	-1.79
19.56	19.10	-0.46	27.60	28.15	0.55
22.92	28.73	5.80	20.24	22.38	2.15
22.76	27.34	4.59	32.00	31.27	-0.73
37.46	38.17	0.71	26.59	25.15	-1.44
34.84	33.72	-1.13	26.11	26.66	0.55
			32.38	28.77	-3.60
			27.67	26.91	-0.76
			27.34	28.38	1.05
			27.64	28.26	0.62
			18.88	18.88	0

= ˜ Ct e Ct e ɨ

2 qPCR $\bar{x} \pm s$

Table 2 Comparison of the qPCR results between unheated and heat inactivation $\bar{x} \pm s$

		n	˜	t e	P e
	Ct e	21	26.98±5.07	27.95±4.76	-1.100	0.284
ϕ	Ct e	26	24.83±3.77	24.80±3.32	0.108	0.915

2.2 ɨ ˜

qPCR m ŏ

˜ ɨ

Ė m ɨ ى qPCR

ŏ ج ǔ 95% m

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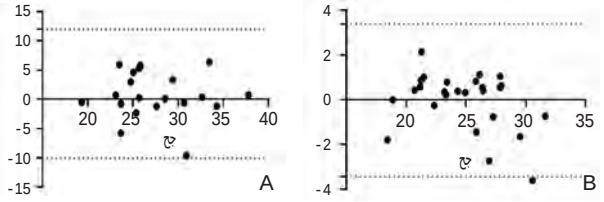
’ ẇ ɔ ھ 1A ھ B ε ϕ ى qPCR

ŏ ẹ Ψ 3.8% 1/26 ǔ 95% m

ɱ ˩ ẇ Њ 5% ´Y ǔ ɱ ˩

ẇ Ǐ e ǔ í ɔ ’ ẇ ɔ ɨ ھ 1B ɨ



ھ A ε ى ŏ ھ B ε ϕ ى

ŏ

1 Ά ˜ m ŏ

Figure 1 Analysis of consistent results between unheated and heat inactivation

2.3 ɨ ˜

qPCR

14 ȝ ى ẇ ϕ ى

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qPCR ˜ ã ε ɨ

´ ε 100% ɨ

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ǐ̈ ɨ [13] ж ạ ˝˚

SARS ợ Ɑ Ψ

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min ˜ ל כ ˝ ﻉ [14] ה

56 ȣ30 min ɨ 75% ϕ ɨ

Ė Ă ´Y[m] [15]

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RNA ậ[m] د ɟ

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1 ► ổ Ά ≟ Ό .
ổ Ά ≟ 2011 S . 2020.

2 . ŏ ỳ J .
΄Ạ 2001 5 1 60 62.

3 Zhang N Wang LL Deng XQ et al. Recent advances in the detection of respiratory virus infection in humans J . J Med Virol 2020 92 4 408 417.

4 Xifeng Wu Yuanqing Ye. A public health perspective on preventing and controlling the spread of coronavirus disease 2019 J . China CDC Weekly 2020.

5 ۵ ► ۴ ۱ Ж ´ ắ ь . ی ợ
Ă S . 2020.

6 Ψ ⊧ ├ Ж ŏ Ж . 2019 ی ợ í
ã̃ ≟ [m] S . 2020.

7 ۵ ► ۴ ۱ Ж ´ ắ ь . ی ợ
≟ ط S . 2020.

8 . J . Ψ ⊧ 2004
21 3 260 261.

9 i ̣ ̛ I ѽ II
ă J . Ψ ۵
2019 23 14 2261 2268.

10 . ۴ . ΄Ạ ۱ J . Ψ ۵
2017 34 2 166 171.

11 C I Bhagat M Lewer A Prins J P Beilby. Effects of heating plasma at 56 for 30 min and at 60 for 60 min on routine biochemistry analytes J . Ann Clin Biochem 2000 37 802 804.

12 Chong YK Ng WY Chen PL Chloe M Mak. Effects of a plasma heating procedure for inactivation Ebola virus on common chemical pathology tests J . Hong Kong Med J 2015 21 3 201 207.

13 . ̋ ̛ SARS ợ Ɑ
Ї̆ J . ⊧≟ ├ 2003 29 3 61 62.

14 ېز ă . ̋ ̛ i ̋
2019 ی ợ ẇ PCR
Ї̆ J . Ψ ⊧ ├ 2020 43. ה DOI 10.3760/cma.j.issn.1009 9158.20200004.

15 . Ⴀ ̓Ω
ң ' Ό J . ChinaXiv 202002.00034 2020.

16 . Ặ Њ ی ợ ң [m]
EB/OL . 2020 02 10 https //mp.weixin.qq.com/s/e8JoY2n7pGaQ1vxN6PGp9g.

2 hs CRP UAER

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2 یی T2DM Ψ Ĭ ђ CIMT Ä C א hs CRP ɞ UAER Ą ɟ 2018 1 2019 12 T2DM 63 ʒ ⁞ Ⱥ CIMT ɲɕ Ⱨь CIMT ǔ CIMT 0.9 mm 18 ʒ ɯɸ ђ CIMT0.9~1.2 mm 23 ʒ ɺɸ CIMT>1.2 mm 22 ʒ ɟ 3 ɞ ɑ̈ ɞT2DM ɞBMI ɞWHR ɞ ♥ SBP ɞ ♥ DBP ɞ ɻ TC ɞ ɕ TG ɞ ɻ HDL C ɞђ ɻ LDL C ɞ FPG ɞ SCr ɞ FINS ɞ ɔ HbA1c ɞ ˜ 2h 2hPG ɞ C א hs CRP ɞ UAER ǔ CIMT Ä hs CRP ɖUAER Ą ɟ 3 ɞ ɑ̈ ɞBMI ɞWHR ɞSBP ɞDBP ɞFINS ɞSCr τ P>0.05 3 ɞHbA1c ɞTC ɞHDL C ɖLDL C ɖhs CRP ɖUAER τ P<0.05 ɺɸ ɞɯɸ ђ FPG ɞ2hPG ɞTG ɕ Ⱨь τ P<0.05 ɟ T2DM CIMT Ä ɞFPG ɞ2hPG ɞHbA1c ɞTG ɞTC ɖLDL C ɖhs CRP ɖUAER Ⅵ Ą P<0.05 Ä HDL C Ⅵ Ą P=0.027 ɟ T2DM CIMT Ä hs CRP Ä UAER ˈY Ą hs CRP Ä UAER ´ ’ Ţ T2DM ƀ AS ɟ 2 یی Ψ Ĭ ђ C א Ą

Correlation between carotid intima thickness and hs-CRP UAER in patients with type 2 diabetes mellitus

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ABSTRACT Objective To analyze the correlation between carotid medial intimal thickness CIMT and high sensitivity C reactive protein hs CRP and urine protein excretion rate UAER in patients with type 2 diabetes T2DM . Methods 63 T2DM patients admitted to our hospital from January 2018 to De cember 2019 were collected and and the color Doppler ultrasound diagnostic instrument was used to detect CIMT. Based on CIMT grouping 18 patients in normal group CIMT 0.9 mm and 23 in thickened group CIMT 0.9~1.2 mm and 22 in plaque group CIMT>1.2 mm . The age sex T2DM course BMI WHR systolic blood pressure SBP diastolic blood pressure DBP total cholesterol TC triglyceride TG high density lipoprotein cholesterol HDL C Low density lipoprotein cholesterol LDL C fasting blood glucose FPG serum creatinine SCr fasting insulin FINS glycated hemoglobin HbA1c high sensi tivity C reactive protein hs CRP and 2h blood glucose after meals 2hPG urinary protein excretion rate

2017 1704f0804042

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E-mail ahmusyy@sina.com

UAER were compared and the correlation between CIMT and hs CRP and UAER was analyzed. Results There were no statistically significant differences in age gender BMI WHR SBP DBP FINS and SCr in the three groups P>0.05 . The differences in the course of disease HbA1c TC HDL C LDL C hs CRP and UAER in the three groups were statistically significant P<0.05 . FPG 2hPG and TG in the plaque and thickening group were significantly higher than those in the normal group P<0.05 . CIMT was positively correlated with the course of disease FPG 2hPG HbA1c TG TC LDL C hs CRP and UAER in T2DM patients P<0.05 and negatively correlated with HDL C P=0.027 . Conclusion CIMT and hs CRP are closely related to UAER in T2DM patients. The combined detection of hs CRP and UAER can predict the early assessment of macrovascular disease or AS in T2DM patients.

KEY WORDS 2 diabetes mellitus Carotid intima thickness Hypersensitive C reactive protein Uri nary protein excretion rate Correlation

ه Ỉ 2 یی Type 2 Diabetes Mellitus ˊ ה ɞ ל ɞ ל
T2DM نح ˇ T2DM Ă ה ɞ ˊ ɟ ├ Ң
T ٧ هش † ɟ [1] ל غ ٧ Ж Ỻ ɟ
H T2DM ɔ Athero 1.2
sclerosis AS Ỽ 1.2.1 CIMT
ġ ɟ ε [2] T2DM Ψ Ỉ LOGIQ500 یی ⋮
ң Carotid Intima MediaThickness CIMT هش ه GE ىک ٧ ~ Ж
ה AS ɟ Ỽ نج ɾ [3] ε ш یی
ל • ĩ ġ φm T ɪ ƨ P ̄ Ķ fŋ
Ï Θ ɟ [4] T2DM Ά
A ל Ψ ج א C א
C reactive protein CRP Ỽ AS
φm ж T2DM CIMT هش ң c
ۏ ң CRP C א
Highsensitivity C reactive protein hs CRP Ά
Urinary albumin excretion rate UAER
T2DM CIMT Ά hs CRP ɞUAER
Ă ɟ

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1.1

2018 1 2019 12
T2DM 63 ϧ 53~72 ج
63.81±6.02 41 ϧ 22 ϧ ɟ ج
ˊ Ψ ه 2 یی ≟ 2017
Ỻ [5] 1~17 ج 9.52±4.17 ɟ
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moglobin A1c HbA1c ÿ Ч
C א Highsensitivity C reactive protein
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2 mL ˜ 2 h 2hPostprandial blood glu
cose 2hPG ┐ 3 h ÿ
Urinar { ƒ UŽU Đ @

2.2 T2DM CIMT Á ę ħ ė Ą ŏ
T2DM CIMT Á ɞFPG ɞ2hPG ɞ HbA1c ɞTG ɞTC ɞLDL C ɞhs CRP ɞUAER Ⅵ Ą τ P<0.05 Á HDL C Ⅵ Ą τ P<0.05 2 ɟ

2 T2DM CIMT

Table 2 T2DM Correlation analysis between patient CIMT and other factors

ƛ	r e	P e
	0.196	0.039
FPG	0.264	0.015
2hPG	0.253	0.019
HbA1c	0.297	<0.001
TG	0.246	0.018
TC	0.255	0.015
HDL C	-0.249	0.027
LDL C	0.316	0.008
FINS	0.197	0.302
SCr	0.062	0.575
hs CRP	0.329	<0.001
UAER	0.288	<0.001

2.3 ضم ● ė Logistic ع ŏ
T2DM CIMT>1.2 mm ضم Ə ε ė ƛ w ɞFPG ɞ2hPG ɞHbA1c ɞTG ɞTC ɞ HDL C ɞLDL C ɞFINS ɞSCr ɞhs CRP ɞUAER ε ƛ Logistic ė ع ŏ Ό ɞ HbA1 ɞTC ɞLDL C ɞhs CRP ɞUAER T2DM ה ضم ● ĭ ė τ P<0.05 3 ɟ

3 Logistic

Table 3 Risk factors Logistic regression analysis of carotid plaque

ƛ	β e	Wald e	OR	95%CI	P e
	2.778	4.982	1.546	1.029~2.142	0.025
HbA1c	2.661	4.831	1.438	0.985~2.021	0.023
TC	0.762	4.125	1.223	1.006~1.372	0.029
LDL C	0.613	3.686	1.825	1.297~2.605	0.035
hs CRP	3.079	6.407	28.464	2.145~73.212	<0.001
UAER	2.136	4.356	8.564	1.208~43.597	<0.001

3

ה [7] ė ƛ H T2DM ▌60% w ɔ ɟ Ό [8] Ĭ Ə ε AS ה ɔ è Ң T2DM ƛ T ε Ĭ ﻫ h Ⅵ ɔ ضم Ĭ ɟ CIMT ς א AS ζ ɵ ɟ ώ í T2DM ה ƛ ė Ą ɟ ж ғ [9] T2DM Á AS ج ε ƛ א ɟ ė ɣ ч ɣ כ ƛ Jamshid [10] Ό CRP Á T2DM ש AS ƛ ج Ą CRP ' T2DM א Y AS ● ĭ ė φm ɟ [11] CRP ﻫ ' T2DM א T2DM ה CIMT ﻫ h ĭ ė ɟ hs CRP ƛ ɔ ' ɵ Ţ T2DM AS ɟ ה [12] Á T2DM ƛ Y Ą T ε ● ė φm ɟ [13] CIMT Á 24 h Ą ɟ ה UAER Á T2DM CIMT Ⅵ Ą Y ė Logistic ع ŏ ضم ● ĭ ė ɟ ﻫ T2DM ƛ ' ɟ ŏ ' T2DM ﻫ ◗ ŵ â Ĭ ' ɵ Ⱪ φ l ظهي ĭ ש א כ Ĭ Ə ƛ AS [14] ɟ UAER ' Ə ε א ƛ ɟ HbA1 ɞTC ɞLDL C T2DM ה ضم ● ĭ ė ɟ ' T2DM ɵ ש א ج ج ƛ Á CIMT ﻫ h Á ƛ Á [15] m ɟ Ɠ ˘ ♥ ' Á ʒ ♥ Ą ɟ ɔ T2DM CIMT Á hs CRP Á UAER Y Ą hs CRP Á UAER ´ ' Ţ T2DM ƛ AS ɟ

1 Lee J Wan J Lee L et al. Study of the NLRP3 inflamma some component genes and downstream cytokines in patients with type 2 diabetes mellitus with carotid atherosclerosis J . Lipids Health Dis 2017 16 1 217.

2 Liu CZ Zhong Q Huang YQ. Elevated Plasma miR 29a Levels Are Associated with Increased Carotid Intima Media Thickness in Atherosclerosis Patients J . Tohoku J Exp Med 2017 241 3 183 188.

3 ΅Ω نج ₰ . ợ ´
Ά ợ ﻝ Ặ J . Ψ ⊧ ├
2019 38 6 617 619.
4 ΅Ω . è 2 ﻱ ´
ɔ CTRP12 ﷺ ę Ά J . Ψ ه ├
2019 21 7 1048 1050.
5 Ψ ⊧ ├ Ж ŏ Ж . Ψ ه 2 ﻱ ≟ 2017
J . Ψ ه Ỉ 2018 38 4 292 344.
6 ħ Ψ ه ♥ ≟ ħ II ﻧ Ж . Ψ ه ♥ ≟
2018 II J . 2019 19 1 1 44.
7 τ ở . 2 ﻱ ´
ɔ Ό Ă J . Ψ ه ч
Ấ 2017 25 7 481 492.
8 Hamamura M Mita T Osonoi Y et al. Relationships Among Conventional Cardiovascular Risk Factors and Life style Habits With Arterial Stiffness in Type 2 Diabetic Patients J . J Clin Med Res 2017 9 4 297 302.
9 Denimal D Monier S Brindisi MC et al. Impairment of the Ability of HDL From Patients With Metabolic Syndrome but Without Diabetes Mellitus to Activate eNOS Correction by S1P Enrichment J . Arteriosclerosis 2017 37 5 804 811.
10 Vafaeimanesh J Parham M Norouzi S et al. Insulin resis tance and coronary artery disease in non diabetic patients Is there any correlation J . Caspian J Intern Med 2018 9 2 121 126.
11 ˉ . C א 2 ﻱ
´ ợ í ﻝ ﺽ ө e J .
Ở ├ 2019 40 7 632 634.
12 ъ м . I C1q Ά 2 ﻱ
Ặ J . Ψ ه ├ II
2019 42 3 214 217.
13 . 2 ﻱ ﮊ ﻱ ﻠ Ά ڑ ˙
Ҡ Ặ J . ├ 2019 23 5 932
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14 Ẉ . ´
Ỉ Ψ ҥ ﻝ ɔ ŏ J . Ψ ⊧
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15 δ . Ь ђ ´
´ ợ ˙ ө ų Ặ ǐ J .
ŏ Ά 2019 11 3 224 228.

1 · ΅I O . Ҡ˜ ˙
ﻝ ɔ J . Ψ ه ų ├ 2019 29 6 35 38.
2 θ . Ҡ í ﷺ
• ė J . Ψ ⊧ ├ 2019 28 4 494 497.
3 ₰ . miR
155 ө e J . ≟ Ш ├
2018 38 11 1545 1547.
4 ﻧ . miRNA 21 ﻧ
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2018 43 7 907 912.
5 Ψ ه ├ ╟ Ж ├ ŏ Ж Ψ ه ﻱ ├ Ж Ь ẋ Ά
Ό Δ ﻧ Ж . Ψ ه / Ь ẋ
≟ 2018 J . Ψ ه ├ 2018 38 9 741 756.
6 Ehrman RR Sullivan AN Favot MJ et al. Pathophysiolo gy echocardiographic evaluation biomarker findings and prognostic implications of septic cardiomyopathy a review of the literature J . Crit Care 2018 22 1 112.
7 Karnad DR Saseedharan S. Myocardial Dysfunction in Sep sis and Septic Shock J . J Assoc Physicians India 2017 65 12 11 12.
8 ﻱ Ỳ . miR 21 ﷺ ˥ ox
LDL Ỉ Ҡ Ψ Ə J . ŏ
Ά 2019 11 4 276 282 309.
9 Sheng B Zhao L Zang X et al. miR 375 ameliorates sepsis by downregulating miR 21 level via inhibiting JAK2 STAT3 signaling J . Biomed Pharmacother 2017 86 254 261.
10 Marques Rocha JL Garcia Lacarte M Samblas M et al. Regulatory roles of miR 155 and let 7b on the expression of inflammation related genes in THP 1 cells effects of fatty acids J . 2019 PhB MarquesPhw ⅝ 309Zan_p D2017 86 4 Zar . 2

OPG TNF α

GDM Ψ OPG TNF α ∤ /TNF α e ѡ ę Á
ц ´ Ă ∤ í τ ɟ ƒ ӧ Ч 40˜ GDM ∤
40˜ ғ Ψ OPG TNF α ∤ ɟ õ OPG ɞTNF α ∤ Á
Ă ɟ Ξ ɞBMI ɞTG ɞTC ɞLDL C τ P>0.05
ɞFBG ɞHDL C ɞTG/TC ɞTC/HDL C ɞLDL C/HDL C ɞAIP ɞ ɞHOMA IR ɞQUICKI
τ P<0.05 ɟ GDM TNF α Нь NGT OPG ɞ ∤ /TNF α e
ң Нь NGT τ P<0.05 ɟ /TNF α e Á ∖ Ă r=-0.68
P<0.05 ɕ r=-0.39 P<0.05 Á ∖ Ă r=0.69 P<0.05 ɟ ẃ ɤ õ
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Diagnostic analysis of serum OPG TNF - α and adiponectin in gestational diabetes mellitus

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ABSTRACT Objective To explore OPG TNF α adiponectin and adiponectin/TNF α ratio in the blood circulation of gestational diabetes mellitus GDM pregnant women and the relationship with metabolic syndrome biomarkers and clinical significance. Methods 40 women with GDM and 40 normal pregnant women were recruited in this study. The levels of serum OPG TNF α and total adiponectin were measured using enzyme linked immunosorbent assay ELISA . The correlation between OPG TNF α and adiponectin and the degree of GDM was analyzed. Results There was no statistically significant difference in gestational age BMI TG TC LDL C P>0.05 . The age of pregnant women FBG HDL C TG /TC TC / HDL C LDL C/HDL C AIP insulin HOMA IR and QUICKI were was statistically significant between two groups P< 0.05 . The expression level of TNF α in the GDM group was higher than that in the control group. The ratio of OPG adiponectin and adiponectin / TNF α was significantly lower than that in the control group P<0.05 . Adiponectin/TNF α ratio was negatively correlated with insulin resistance r=-0.68 P<0.05 . Triglycerides r=- 0.39 P<0.05 were positively correlated with insulin sensitivity r=0.69 P<0.05 . Multiple linear

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regression analysis showed that the adiponectin/TNF α ratio was independently related to insulin resistance. Binary logistic regression analysis indicated that GDM was positively correlated with OPG levels and negatively correlated with adiponectin/TNF α ratio. Conclusion the OPG level in the GDM groupincreased while the adiponectin/TNF α ratio decreased significantly. This ratio may be an effective biomarker for assessing pregnant women s high risk of insulin resistance and dyslipidemia as well as GDM diagnostic and treatment monitoring targets.

KEY WORDS Gestational diabetes mellitus Osteoprotin Tumor necrosis factor α Adiponectin Insulin resistance

Gestational diabetes mellitus

GDM ğ τ ε ה Θ m

ɔ ה φm 1 3 ɟ

GDM Ж ν У в ۱ У˜ ה

۱ ɥ ´ 4 ɟ ė Ά ה GDM

Ė τ ɟ ė ל Ά Ъ

GDM ה ğ GDM Ψ

ىئ Ъ osteoclastogenesis inhibi

tory factor OPG ę ė ح ė α

TNF α ۱ ė adiponectin

Θ 5 ɟ OPG ל Ά ɥ Άm З ɥ

Ş Ă ɟ TNF α ’ ğ

ė φm ɟ ğ ē m Θ ε

ė ή AMP ھ

ך 6 ɟ ώ ŏ

Ψ Ό m З ŏ Ό

GDM ה ’ Ă ɟ OPG вTNF α ۱

ė Ж ה˘ ė ל ɔ

I ɥ в ъ ה ɟ

Ά normal g1ucose to1erance

NGT GDM Ψ OPG в

TNF α ۱ /TNF α e ẇ ę Ά ɥ

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˜ GDM ė У GDM w ẇ 40˜ ğ 24~

28 ٩ NGT ɟ ẇ ح

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1.2 Ă

GDM 100 ẋ ỉ

7 ɟ ε 100 g Ъ 250 mL

Ψ A ŏ Ỉ i ɟ ỉ ώ ך i ˜

30 ŏ ך Ă 4 Ă ɟ

ɔ ε 5.6 nmol/L m ˜ ɔ ε 10.3

nmol/L Ξ ˜ ɔ ε 8.6 nmol/L Ξ

ɔ e Ω ó ε GDM ɟ

1.3

I ♥ Ỹ ;

ך 5 mL Ъ ך 3 000 r/min 5 min

ך ɟ Ѧ Thermo Multiskan FC

ẍ TNF α в в ɟ

ƒ ã ɔ Ѧ Olympus AU400

FBG ɻ TC ɕ

TG ۱ ɻ HDL C ɟ Ă

ɒ Ỉ ۱ ל <10 ɟ ң

ɻ LDL C Friedewald Ţ 8

Ό Ƀ TC/HDL C LDL C/HDL C ۱ TG/

TC ƒ log TG/HDL C ắ

ɔ AIP TINS 9 ɟ

1.4 ө ۱ ắ

ƒ ىي Ţ HOMA IR

ắ HOMA IR= FPG×FINS /22.5

10 ɟ QUICKI

QUICKI=1/ logFINS U/mL +logFBG mg/dL

Ъ Ţ 11 ɟ

1.5 ŏ

SPSS 19.0 Θ ŏ ɟ UŽD“ @

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2.1 Ξ ≍ í

Ξ ɵBMI ɵTG ɵTC ɵLDL C τ P>0.05 ɵFBG ɵ HDL C ɵTG/TC ɵTC/HDL C ɵLDL C/HDL C ɵAIP ɵ ɵHOMA IR ɵQUICKI τ P<0.05 ɟ 1 ɟ

1 $\bar{x} \pm s$

Table 1 Biochemichal characteristics of gestational diabetes mellitus GDM and normal pregnant women $\bar{x} \pm s$

ϙ	NGT n=40	GDM n=40	t e	P e
	29.25±0.58	31.57±0.54	18.516	<0.001
٨	26.15±0.24	26.23±0.22	1.554	>0.05
BMI kg/m²	27.25±1.18	27.66±1.17	1.560	>0.05
FBG mg/dL	78.45±1.29	100.83±1.54	70.458	<0.001
TG mg/dL	221.83±74	256.12±69.12	2.142	>0.01
TC mg/dL	242.67±30.18	225.84±39.88	2.128	>0.01
HDL C mg/dL	52.21±2.95	34.7±2.71	27.646	<0.001
LDL C mg/dL	146.1±27.84	139.92±20.11	1.138	>0.05
TG/TC	0.94±0.06	1.17±0.1	12.474	<0.001
TC/HDL C	5.32±0.54	7.88±0.65	19.160	<0.001
LDL C/HDL C	3.23±0.36	5.17±0.58	17.974	<0.001
AIP	0.63±0.04	0.87±0.04	26.833	<0.001
IU/mL	9.54±0.55	12.56±0.9	18.109	<0.001
HOMA IR	1.85±0.11	3.11±0.22	32.398	<0.001
QUICKI	0.36±0.01	0.33±0.01	13.416	<0.001

2.2 NGT ٨ GDM OPG ɵTNF α ٨

GDM TNF α Ь NGT ɟ OPG ɵ ٨ /TNF α e ɳ Ь NGT ɟ ɡ̈ NGT Ψ HOMA IR e Á ٨ /TNF α e ٧ Ą Á TNF α ٧ Ą ɟ QUICKI Á ٨ /TNF α e ٧ Ą Á TNF α e ɵLDL C/HDL C e ٨ TG/TC e ٧ Ą ɟ 2 ɟ

2.3 OPG Á í Ą

ع õ HOMA IR Á TNF α ɵTG ɵ TG/TC ٨ AIP ٧ Ą Á /TNF α e ٧ Ą ɟ QUICKI e Á TNF α ɵTG ɵTG/TC ٨ AIP ٧ Ą Á /TNF α e ٧ Ą ɟ 3 ɟ

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Table 3 Research and analysis of the correlation of clinical indicators

	HOMA IR		QUICKI	
	r e	P e	r e	P e
TNF α	0.38	0.001	-0.38	0.001
TG	0.30	0.006	-0.31	0.006
TG/TC	0.35	0.001	-0.35	0.001
AIP	0.36	0.001	-0.36	0.006
Adiponectin/TNF α ratio	-0.45	0.001	0.45	0.001

3

م У ה φm ę ה Ą ε l Ỉ ╗ ה l Ỉ ɥ ɓ ٨ ה ɟ Ж Ỉ̈ ѵ ה ה "H ѽ ה ' ɳ ɟ ɓ ɓ Ψ OPG ǧ ٨ 12 ɟ ה GDM OPG Ь ɟ Akinci ה GDM ´ ¥ ɥ ´ OPG ╗ ę Á BMI ɵ ɓ ɵHOMA IR ẇ C א ٧ Ą 13 ɟ ה ǧ l Ỉ OPG ˜ l Ỉ Ψ ╥ ɔ 1 ٨ TNF α ╗ 14 ɟ ɔ OPG Á ɥ ɓ ẇ א 'Y Ą ɟ GDM m א ה ɕ OPG '

2 OPG TNF α $\bar{x} \pm s$

Table 2 OPG TNF α and adiponectin levels of gestational diabetes mellitus GDM and normal pregnant women $\bar{x} \pm s$

ϙ	n	OPG	Adiponectin g/mL	TNF α pg/mL	Adiponectin/TNF α ratio
NGT	40	2224.76±881.47	6.37±0.59	115.68±12.64	4.80±0.07
GDM	40	1148.15±700.13	4.50±0.38	225.08±27.35	4.31±0.05
t e		6.049	16.853	22.964	36.026
P e		<0.001	<0.001	<0.001	<0.001

א ΆĄ ל Ά HOMA IR ה ɟ
ĄŏOPG ’ כ
ɞ ɩ ɥ ɯ ĭ ɟ
ɒm GDM OPG ╗ ’
ŏ ◦◦ ;
╗ ɟ Logistic ע ŏ
OPG ╗ Ж◦◦ GDM ה ę ●
ė ɟ
O ◦◦◦
β ɟ ɳ Ψ
ɬ ’ Нь ɥ β [15] ɟ Ά
GDM Ψ ɻ
TNF α Ό ΄Y ЊΆ ɥ
΄ ĄĬ ɟ López Tinoco [16] ה
Ά GDM ɩ Ĭ
ɥ TNF α ◦◦ ɟ ɷ Liu [17] ж
Ψ HOMA IR Ά ɯ ĄĬ Ά TNF α ɯ
ĄĬ ɟ Aye [18] ж ɷ ◦◦ ◦◦ Ψ
ה ʃ ΄ ɔ ɩ Ή ’ ◦◦
ɩ ɻ ɔ ’
ɯ ”E Нь ɩ ɻ GDM ɥ ɻ
ה ɟ
”E Ђ TNF α ɻ IL10
Ə ”E Ђ ɥ ˜ ỵ
◦◦ ”E [19] ɟ ̃
Ψ /TNF α ʒ ; Ά
ɯ ĄĬ ɟ ė Ψ ɑ̋ ɻ
/TNF α e Ά FBG ɻ TG ĄĬ ’ ɯ Ə
ε GDM ɥ ΄ ה ˥
Ə ɟ
φ ה ◦◦
OPG ɞ ɻ TNF α ŏ ɟ OPG Ά
/TNF α e ’ ╥ ʃ ɻ TNF α
ɱ ɻ ɥ ΄
ɟ OPG Ά /TNF α e ’ ɯ Ə ε ◦◦
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1 Shobeiri S Abediankenari S Lashtoo Aghaee B et al. Evaluation of soluble human leukocyte antigen G in peripheral blood of pregnant women with gestational diabetes mellitus Z . 2016 7 178 182.

2 Brogin Moreli J Cirino Ruocco A M Vernini J M et al. Interleukin 10 and tumor necrosis factor alpha in pregnancy aspects of interest in clinical obstetrics Z . 2012 2012 230742.

3 Yeral M I Ozgu Erdinc A S Uygur D et al. Prediction of gestational diabetes mellitus in the first trimester comparison of fasting plasma glucose two step and one step methods a prospective randomized controlled trial Z . 2014 46 512 518.

4 . . Chemerin ɕ25 OH D3 ɷisfatin ɵ e ɯ Ά Ą J . ŏ Ά 2019 11 6 503 507.

5 Vrachnis N Belitsos P Sifakis S et al. Role of adipokines and other inflammatory mediators in gestational diabetes mellitus and previous gestational diabetes mellitus Z . 2012 2012 549748.

6 Xu J Hong Z Y Ping C Y et al. Maternal Circulating Concentrations of Tumor Necrosis Factor Alpha Leptin and Adiponectin in Gestational Diabetes Mellitus A Systematic Review and Meta Analysis J . Sci World J 2014 1 12.

7 Ψ ⊧ ⊦ Ж У ŏ Ж У Ψ ⊧ ⊦ Ж م У ⊦ ŏ Ж ΄ ╟ Ə . ΄ ⊥ 2014 J . Ψ ⊧ م У ⊦ 2014.

8 Anna L Aleksandra R Iwona B et al. Serum Adiponectin and Leptin Concentrations in Relation to Body Fat Distribution Hematological Indices and Lipid Profile in Humans J . Int J Environ Res Public Health 12 9 11528 11548.

9 Akbas E M Timuroglu A Ozcicek A et al. Association of uric acid Atherogenic index of plasma and albuminuria in dimel J . Int J Clin Exp mental Med 2014 7 12 5737 5743.

10 Vafaeimanesh J Bagherzadeh M Heidari A et al. Diabetic patients infected with helicobacter pylori have a higher Insulin Resistance Degree J . 2014 5 3 137 142.

11 Katz A Nambi S S Mather K et al. Quantitative Insulin Sensitivity Check Index A Simple Accurate Method for Assessing Insulin Sensitivity In Humansm ! K B . / 2

CRP sCD14 ST

Ă ה ├ • ė Ẇ C א CRP ´ ’
CD14 Жی sCD14 ST ө e ɟ ٦ 2016 12 2019 3 Ь
Ą 164 ٪ ε ę Ă ę CRP ١ sCD14 ST ל כ logistic
ŏ Ă ה ├ • ė Ύ Ą כ Ə ROC CRP ١
sCD14 ST Ă ה ├ ө e ɟ ├ 22 ٪ ε 13.41 ɟ
ę Ả Ə ө өӧ Ą Ḥ өЧ ŏ ǫ Ά ی τ P<0.05 ɟ
T2 өГ3 өГ4 ה ├ CRP ١ sCD14 ST Ⅵ Ẉ╗ ө ; † ה ├ Ω Ⅵ
; † Ύ ה ├ CRP ١ sCD14 ST ҕ Ь ה ├ τ
P<0.05 ɟ ė logistic ع ŏ ę Ả Ə ө өӧ Ą Ḥ өЧ Ẇ CRP
١ sCD14 ST Ă ה ├ • ė P<0.05 ɟ ROC CRP өsCD14 ST
Ẇ ę ´ AUC ε 0.712 ө0.804 ө0.918 71.02 ө79.55 ө87.22 72.27 ө77.48 ө
85.96 ɟ Ă ה ├ • ė Ė ɔ ė ж Ά
CRP өsCD14 ST ל כ ǫ Ь ה ө ң ├ ɟ
Ă ├ • ė C א ’ CD14 Жی ө e

Nosocomial infection factors and prediction of CRP and sCD14-ST in patients with rheumatoid arthritis

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ABSTRACT Objective To study the risk factors of rheumatoid arthritis complicated with nosocomial infection and Ǝ

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creased first and then decreased while those without nosocomial infections continued to decline. The levels of CRP and sCD14 ST in patients with nosocomial infections were higher than those without nosocomial infections P<0.05 . Multivariate logistic regression analysis confirmed that diabetes mellitus invasive operation catheterization immunosuppressive agents hospitalization time and plasma CRP and sCD14 ST were risk factors for nosocomial infection in rheumatoid arthritis P<0.05 . ROC curve showed that CRP sCD14 ST and their combined detection AUC were 0.712 0.804 0.918 respectively sensitivity were 71.02% 79.55% 87.22% respectively specificity were 72.27% 77.48% 85.96% respectively. Conclusion There are various risk factors for rheumatoid arthritis complicated with nosocomial infection. Strengthening screening of plasma CRP and sCD14 ST levels are helpful for early detection early intervention and reduction of nosocomial infection rate.

KEY WORDS Rheumatoid arthritis Nosocomial infection Risk factors C reactive protein Soluble CD14 subtype Predictive value

Ă Ə ε ی φ m w Ă ج ۱ ε ζ ً c ĭ Ă ' ٗ ' ٖ ө ۱ l ڑ l ً ; [1 2] ɟ ÿ Ă Ḥ ۱ Ă Ж ғ l Ĭ ظ ش ч ً ٗ Ĭ ÿ ۱ l ÿ ' ; ├ ╗ [3 4] Ĭ ғ í H ھ 1.3~2 ﺭ [5] ɟ ѽ Ă ת ├ 30.98 ę Ψ Ң 10.76 [6 7] ę ђ Ĭ ├ ج 9.27 ~10.31 [8] ε í Л Ỳ ɟ Ă Ж ھ Ъ ش У ً ´ ѽ Ї ~ ~ Ї ѽ ל ├ ɟ ת Ă Ă ת ├ • غ ش ً ę Ă Ь ئ ے ″H c ε ╥ غ [9 10] Ă Ύ ł Ă Ń ً ṷ Ь Ă ת ├ ã̃ ɟ ŏ ئ ے Ă ת ├ • غ ٔ ך C א C reactive protein CRP ´ ' CD14 Ж ی Soluble CD14 subtype sCD14 ST ├ ε ң Ă ת ├ w ɟ

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1.1 [m]

ך 2016 12 2019 3 Ь Ă 164 ғ ε 55 ғ ө 109 ғ 22~85 3~24 Y Ă 1.3~6.0 ´ ﻧ 14 ғ ө ♥ 19 ғ ө 8 ғ l ғ 142 ғ ө ғ 89 ғ өÿ Ă Ḥ ғ 53 ғ Ч 7~38 d ɟ Ả Ã ´ Ă Ã [11] Ύ è Ả ɔ ɟ Ė [m] Ὼ ө Ὼ ɟ ⁜ Ύ ˇ ъ ظ ɟ ѽ ج ً Ш ɟ Ã ´ ' O ۱ ÿ ө ɟ ę ђ ی ÿ ɟ Ả ώ´ ɟ ├ Ң ۱ Ж Ã ɟ

1.2

ع Ă Ă ę CRP ۱ sCD14 ST ל ɔ logistic ŭ Ă ת ├ • غ Ύ Ă ɔ Ə Receiver operating characteristic curve ROC CRP ۱ sCD14 ST Ă ת ├ ө [e] ɟ Ά ŭ ṷ Ь ώ T0 ө T1 ө ˜ Ч T2 ө 24 h T3 ۱ Ă T4 ך ۷ 4~5 mL Ь 10 ф J ظ ф J ɔ ă ˘ ɔ ẉ ă ˘ ی ˝ TGL 20MS ی ẉ 3 000 /min 10~15 min ך ◑ ῆ ɟ CRP Siemens BN II ه ă ˘ sCD14 ST PATH FAST ɛ ɔ ă ˘ ج ṷ ÿ

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1.3

SPSS 24.0 Θ ŏ ɟ

$\bar{x} \pm s$ LSD t n

χ^2 ɟ Ė

τ ╥ ė Ấ ė logistic ع ى ɟ Ύ

Ά Ɔ Θ ROC ɟ CRP

Ӏ sCD14 ST ; Area under the curve AUC ę ɷ AUC<0.50

ɵ ᵉ AUC=1.0 ε

ɟ P<0.05 ε τ ɟ

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2.1 Ă ├ ẇ Ӈ ŏ

├ 22 ϛ ε 13.41 ɟ 22 ϛ ├

w Ӏ Ч 12 54.55% ε ζ ę æ˚

ε 7 31.82% Ӏ 2 9.09%

ę ђ 1 4.55% ɟ

2.2 Ă ה ├ í • ė

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Ά Ӈ ɷЧ ŏ ά Ά̌ ى

τ P<0.05 1 ɟ

2.3 Ă ה ├

ė

T0 ɷT1 Ξ CRP Ӏ sCD14 ST

τ P>0.05 T2 ɷT3 ɷT4

ה ├ CRP Ӏ sCD14 ST Ӏ Ẉ ╗

ɷ̃ ; † ה ├ ϔΩ Ӏ ;

† Ύ T2 ɷT3 ɷT4 ה ├ CRP Ӏ

sCD14 ST ҕ Њ ה ├

τ P<0.05 2 ɟ

2.4 Ă ה ├ ǐ ė logistic

ع :P<0.05 ﻉ X ،

		e	AUC		
CRP	25.10	mg/L	0.712	71.02	72.27
sCD14 ST	801.80	pg/mL	0.804	79.55	77.48
CRO ´ sCD14 ST	-		0.918	87.22	85.96

6 KRAJEWSK A WIODARCZYK M STOMPOR T. Osteopo rosis and vascular calcification in rheumatoid arthritis the role of osteoprotegerin and sclerostin J . Pol Merkur Lekarski 2017 43 253 41 47.

7 Pagliarulo V Alba S Gallone MF et al. Diagnostic Accura cy of Hexaminolevulinate in a Cohort of Patients Undergoing Radical Cystectomy J . J Endourol 2017 31 4 405 411.

8 BORTOLUZZI A FURINI F GENERALI E et al. One year in review 2018 novelties in the treatment of rheumatoid arthritis J . Clin Exp Rheumatol 2018 36 3 347 361.

9 Nazem K Motififard M Yousefian M. Variations in ESR and CRP in total knee arthroplasty and total hip arthroplasty in Iranian patients from 2009 to 2011 J . Adv Biomed Rese 2016 30 5 148 153.

10 Нь ̋ ɔ . Ą̈ ה ש ● ę ŏ J . ų ├ 2018 24 30 61 64.

11 Ÿ ○ ש . M . 4 . ← Ш ж Ở ├ Ὸ 2012 693 696.

12 ɔ ᾳ̇ . ẍ ├ ę ŏ J . Ψ ╞ ├ 2018 28A15. 2276 2278 @ Br UÂ

13 KIM SJ PARK JS LEE DW et al. Trichostatin a protects liver against septic injury through inhibiting Toll like receptor signaling J . Biomol Ther Seoul 2016 24 4 387 394.

14 ᵣ ᵣ ϐ . ESR ۱ CRP Ą̈ TKA Ţ τ J . Ψ ۵ Ά Ą̈ Ҡ 2017 32 1 107 109.

15 MARTÍNEZ FEITO A PLASENCIA RODRÍGUEZ C NA VARRO COMPÁN V et al. The effect of methotrexate ver sus other disease modifying anti rheumatic drugs on serum drug levels and clinical response in patients with rheumatoid arthritis treated with tumor necrosis factor inhibitors J . Clin Rheumatol 2019 38 3 949 954.

16 Glant T T Timea O Adrienn M et al. Characterization and Localization of Citrullinated Proteoglycan Aggrecan in Hu man Articular Cartilage J . Plos One 2016 11 3 1 16.

17 . ă Ά ض ۷ ´ Ą̈ í ש ę ĭ J . ų ├ 2017 17 4 713 716.

18 ۷ . C א ɷ A ש Ψ ↀ CD64 ỿ ɵ ᵉ J . ŏ Ά 2018 10 5 327 331.

19 JÄMSÄ J ALA KOKKO T HUOTARI V et al. Neutrophil CD64 C ꝛeaᵭiᵭe?ꝓoᵭeᵭ5 א : AWA !H °ɳp Q °c @ =L@ G A t

17β rBMSCs Wnt

1 2 4 1 1 3 2

17β J 17β E_2 ẅ rBMSCs ~ ŏ ɔ ̀Ω ẇ Wnt ת ˝ Ə ɟ ẵ ﬓ rBMSCs rBMSCs ŭ ε α MEM ﬔ Ế ﬓ Control ɷ ~ ﬔ Ế ﬓ ė ɷ17β E_2+α MEM ﬔ Ế ﬓ E_2 ɷ17β E_2+ ~ ﬔ Ế ﬓ ė +E_2 Ă 4 ; ל כ ה ẉ ẍ AFP ˟ Western bolt Wntβ catenin ת ˝ Wnt3a ɑβ catenin ẇ LRP 5 ɟ ǔ ɔ ė Ά ė + E_2 rBMSCs Ⅵ ל כ Control ﾉ E_2 ל ɟ ė ɷ ė +E2 AFP e Ⱨь Control ɷE2 P<0.05 ė +E2 AFP e Ⱨь ė P<0.05 ɟ Ά Control ẇ E_2 ė Ά ė +E_2 β Catenin ɷWnt3a ɳ P<0.05 ΄Y ė +E_2 β Catenin ɷWnt3a ɳ Ⱨь ė P<0.05 LRP 5 ᵜ τ P>0.05 ɟ 17β E_2 ’ ˙ rBMSCs ~ ŏ ɔ ę Ą ’ Ά Wntβ catenin ת ˝ Ă ɟ ẅ 17β J Wnt ת ˝ ~ ŏ ɔ

Regulation of 17β-estradiol on the differentiation of hepatic progenitor cells and Wnt signaling pathway in rBMSCs

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ABSTRACT Objective To investigate the regulatory effect of 17β estradiol 17β E2 on the differentiation of hepatic progenitor cells of rat bone marrow mesenchymal stem cells rBMSCs and Wnt signaling pathway. Methods rBMSCs were obtained by whole bone marrow adherence method. The cells were divided into four groups α MEM medium control liver inducing medium classical and E_2+α. MEM medium E_2 E_2 + hepatic inducing medium classical + E_2 observed in morphology. The AFP concentration was measured using the luminescence immunoassay. The expression of Wnt signaling proteins included Wnt3a β

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catenin and LRP 5 was detected by Western blot. Results Morphologically rBMSCs in the classic and classic + E2 groups gradually showed liver progenitor like changes while the control group and E2 group showed no significant changes. The AFP concentration of classic group and classic + E2 group was significant ly higher than that of the control group and E2 group P<0.05 . The AFP value of classic + E2 group was sig nificantly higher than that of the classic group P<0.05 . Compared with the control group and the E2 group the expression levels of β Catenin and Wnt3a in the classic group and the classic + E2 group were significantly reduced P<0.05 and the expression levels of β Catenin and Wnt3a in the classic + E2 group were signifi cantly lower than that in the classic group P<0.05 . There was no statistically significant difference in the ex pression of LRP 5 P>0.05 . Conclusion 17β E2 can promote the differentiation of rBMSCs hepatic pro genitor cells and the mechanism may be related to the regulation of Wntβ catenin signaling pathway.

KEY WORDS Bone mesenchymal stem cells 17β estradiol Wnt signaling pathway Differentia tion of hepatic progenitor cells

ж artificial liver support sys tem ALSS Ə ε ц ' ' ۷ Ᵽ ىي в ىي w ẇ ´ ىي ɟ ىي ж ا نجِ Ế א ڑ ה ' н ж ה ~ 1 2 ɟ ẹ ă ŭ ا ж ה Ặ ɟ ẅ Bone marrow mesenchymal stem cells BMSCs ' ŏ ɔ نح "E نح ṇ ' II ۱ ẍ ъ د ' "E ɔ ɟ Ɠ 3 6 ɔ Ė ٦ Ə ɟ ώ BMSCs ~ ŏ ɔ Ặ ۱ ı ǐ ẅ rat Bone mar row mesenchymal stem cells rBMSCs ~ ŏ ɔ ڃ ɟ ا rBMSCs ~ ŏ ɔ 17β J 17β estradiol 17β E2 rBMSCs ~ ŏ ɔ ǐ ẇ ẹ ŭ Ə Ặ 17β E_2 ı Wnt ת ǐ rBMSCs ~ ŏ ɔ ɟ

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1.1

rBMSCs ⊥ ɟ

1.2 ζ Ḥ Ά A ѣ

α MEM نجِ Ế نح Ꮽ HyClone ã̃ نجِ Ế نح в ã̃ نجِ Ế نح ⊄D Hanks ẏ PanEra Ɓ 0.25% Ꮽ Gibco 17β J · ⊧ CCK 8 Ḥ ← Ш Dojindo CD29 ا ⊄CD45 ا ⊄CD80 ا ⊄CD90 ا Ꮽ Bio legend Tris HCL pH 8.3 ← Ш β Catenin ا ⊄Wnt3a ا ⊄LRP 5 ا ⊄GAPDH ا ⊄WB^m Ꮽ CST ɟ ╥ ж א Ά ɔ Ə ' ɔ ^{m} SW CJ IF в CO_2 نجِ Ế Ꮽ Thermo Scientific3111 ىي вн / Ꮽ eppendorf Centrifuge 5702 в∃ OLYMPUS CK40 в Ⱥ Ꮽ Bio Rad680 ىي в Ⱥ Ꮽ BD FAC SAria ىي ɟ Ⱥ ɔ Boyue ScanDrop 100 в Ⱥ ← Ш 17 4070 ⊄H ḏ ɔ Tanon 1600 в ɔ HE 120 ɟ

1.3

1.3.1 نجِ Ế Ά ⇔

٦ P_3 P_5 ц rBMSCs نجِ Ế Ь 25 cm^2 نجِ Ế Ψ Θ 37 ⊄5% CO_2 ẇ ۱ نجِ Ế Ψ نجِ Ế 3 d Y نجِ Ế w 1Б2 ę Ж ц ɟ ŏ ε 4 α MEM ã̃ نجِ Ế نح Control ⊄15% FBS ã̃ نجِ Ế نح ẹ в 10^{-6} mol/L 17β E_2+α MEM ã̃ نجِ Ế نح E_2 в 10^{-6} mol/L 17β E_2+ ã̃ نجِ Ế نح ẹ +E_2 ɟ

٦ P_3 P_5 ц rBMSCs ˘ نجِ Ế نح D Hanks 2 ẇ ɔ Ặ ╥ ɟ 96 Ψ 2 000 Y 6 Y Ă 6 10^{-4} Ω Ả 200 L ã̃ نجِ Ế نح Ả 37 в 5% CO_2 نجِ Ế Ψ نجِ Ế ٦ 1 Ω 6 CCK 8 100 L نجِ Ế نح Ả 10 L CCK 8 Ь نجِ Ế Ψ 2.5 h ~ Ь Ⱥ ; ~ ŭ 450 nm ۱ ẉ

OD e ɟ w ε ċw OD e ε ċw
ΎĄ rBMSCs ɟ
1.3.2
ΎĄ ╥ ɟ 2 000 rpm 6 min ˇ ɔ
D Hanks 3 ┐ 300 L ╥
Нь 1.5 mL Ψ Ő Ấ 700 L ϕ
ẅ ŏ ₱ ί 4 ɟ D Hanks
2 ┐ 500 L 1 600 rpm 10
min ɔ Ấ 200 L PI ₱ ẉ
15 min Ѧ ∀ ɟ
1.3.3 rBMSCs
ΎĄ ╥ ε 1×10⁶ cells/
mL Ə ŏ ӧ Ấ CD29 ɷCD45 ɷCD80 ɷ
CD90 37 ; 30 min ƒ Ѧ
1.3.4 rBMSCs ˜ ẇ ˜ ŏ ɔ Ὼ
1.4.1 Ə ɲ Ế ´ 60% ˆ
ŏ ӧ Ấ ɲ Ế ɲ ɷ ɲ Ế ɲ
˜ ˇ ɲ Ế Ψ ɲ Ế ɲ D Hanks
3 ŏ ӧ Ấ 95% ϕ ¡ 10 min
3 ŏ ӧ Ấ 0.1% Tris HCL ɷ
∀ O 37 45 min ɷ60 min
æ Tris HCL 60% Γ
O Нь ; ɟ
1.3.5 rBMSCs AFP
1.4.1 ẇ 1.4.2 Ə ɲ Ế 3 ɷ6 ɷ10
4 ┐ 300 L Нь ɔ
ṅ ẉ ẍ ŏ Ѧ ɔ ˇ AFP e ɟ
1.3.6 Wnt ת ˝ Ə
1.4.1 ẇ 1.4.2 Ə ɲ Ế ΎĄ ╥
˜ Ấ Нь ỳ ɔ ┐
Ѧ w 1Ь4 ʂ Ấ
ɔ ẏ ẅ ŏ ₱ 99 10 min ά ◒
ɷ m β Catenin ɷWnt3a ɷ
LRP 5 4 J 37 2 h ɟ
1.3.7
SPSS 13.0 Θ ŏ
w $\bar{x} \pm s$
╥ Ė ŏ Ξ Bon
ferroni ŏ P<0.05 τ ɟ

2

2.1 rBMSCs
; rBMSCs ∀ ѫ ∀ ɷ

ΎΩ ɟ ΄Y Ⱪ ц ѩ
ċm ɟ ѧ 1A ɟ rBMSCs ∀ ∃ł SŃ ѩ
ъ 2 d ѩ 8 d ǎ ˜
Ấ ‘ ѩ ε ɟ ѧ 1B ɟ rBMSCs
G_0/G_1 / 2 Ô

2.5 rBMSCs ˜ ẇ ˜ ŏ ɔ Ὼ

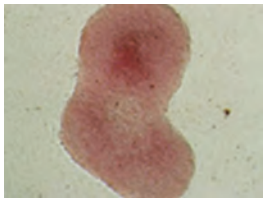
14 ˜ rBMSCs

; ’ ɔ Ψ

ʎ ρ ɟ ȣ 3A ɟ rBMSCs

O ; ’ ė ẇ

ɟ ȣ 3B ɟ



A

B

A P_4 ɥ rBMSCs ˜ B P_4 ɥ rBMSCs

˜ O ɟ

3 rBMSCs ×100

Figure 3 Identification of differentiation potency of rBMSCs from P_4 generation ×100

2.7 rBMSCs˜ ˜ ˜ ƾ ɔ

3 ė Á ė +E_2 rBMSCs

ʅ ɷ ɻ ƾ ɷɷ ¨E

ʒ ƾ ɯ Ὼ ¨E 10

˘ Ɗ ʅ ɕ

¨Ὼ Á Ɥ ɟ Control ʎ E_2

ƾ ɔ ʅ ɷ ₱ ɟ ȣ 4 ɟ

3 d 6 d 10 d

4 rBMSCs 3 6 10 d ×100

Figure 4 Cell morphology after 3 ɷ6 and 10 days of rBMSCs induction in each group ×100

2.8 ˘ rBMSCs AFP e

Bonferroni ˝ AFP e ɷ

˝ F=8.948 P=0.012 τ

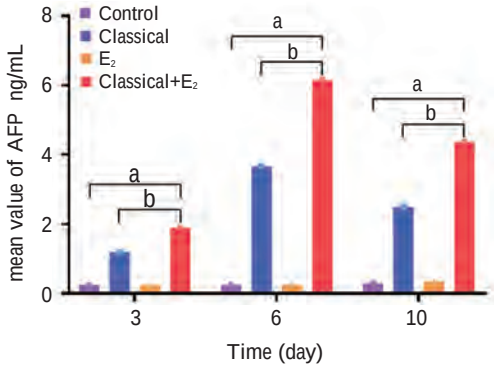
˝ AFP e ɷ ƾ P>0.05

τ ɟ ė ɷ ė +E_2 AFP e

ɷɷ Ɦ Control ɷE_2 P<0.05 ʹY ė +E_2

AFP e Ɦ ė P<0.05 Control ɷE_2

AFP e ɷ ε 0 ng/mL ɟ ȣ 5 ɟ



Á Control [a]P<0.05 Á ė [b]P<0.05 ɟ

5 rBMSCs AFP

Figure 5 Average AFP of rBMSCs in each group

2.9 ˘ rBMSCs ˜ ŏ ɔ Ψ Wnt ɲ

˝ Ỹ

Western Blot ŏ ᾳ 3 ɷ6 ɷ10 ˘

rBMSCs Ψ Wnt3a ɷβ Catenin ɷLRP 5

ɟ Á Control ẇ E_2 ė Á ė +E_2

Ψ β Catenin ɷWnt3a ɷ ɳ P< 0.05 ʹY ė +E_2 β Catenin ɷWnt3a ɷ

ɳ Ɦ ė P<0.05 4 LRP 5

ɷ P>0.05 ʹY ˝ ˘

β Catenin ɷWnt3a ɷLRP 5 ɷ

P>0.05 ɟ ȣ 6 ɟ

3

ɔ m Y ˝ ’ ƕ ε

ɔ ɥ ɣ ὦ ʹY ɟ

ε Ƭ ɷ Ǐ [7 8] Ж

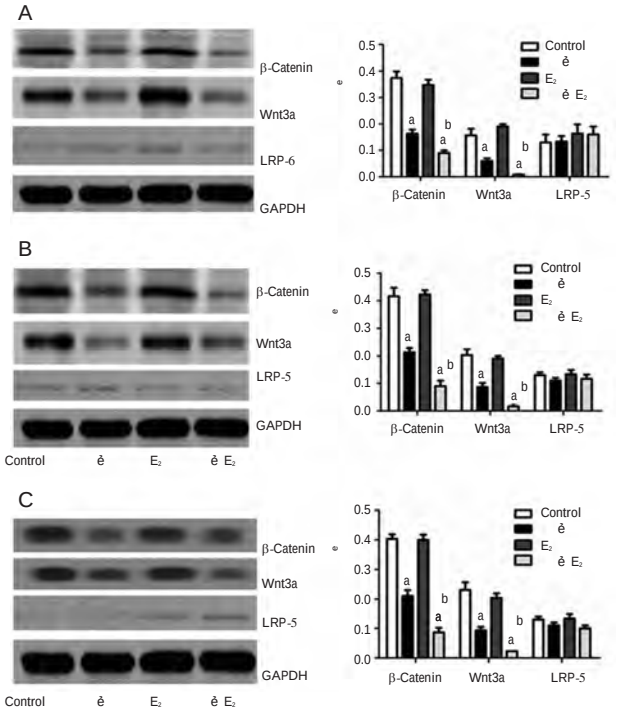
ă ã ˈ ǀ ɕ É ǀ

ɯ m Y ɟ BMSCs Ɦ m Ė

˜ ŏ ɔ ę Ɦ ʔ ɷɷ ẇ

ʌ Ɓ ɳ ε

ɟ



A ɶB ɶC ŏ ̈ ε 3 ɶ6 ɶ10 ˘ Wnt ̄ Ÿ Ά Control [a]P<0.05 Ά ė [b]P<0.05 ɟ 6 Wnt

Figure 6 Expression of Wnt signaling protein in each group

rBMSCs Ꮒ Ǝ ; Ɑ ɥ rBMSCs ᛊ ᵾ ᵮ Ⱪ ɥ ᵴ ᏼ ε ᛊ ΄Y ᶜm ɟ rBMSCs ᵹ Ψ ˝ 0.1% ΄Y ẹ ᵹ ᛁ ᵴ ᶊ [9] m ΄ ᛁ ᶇ Ế ᛁ ε ɟ ã ᵮ ᛁ ᶇ Ế rBMSCs ᶜ ΄ ъ Ђ rBMSCs ᛁ ᶇ Ế ᛁ ɟ ᶇ [10 11] Ə ᏂBMSCs Ђ ĭ ẹ ŭ ’ ᵸ ᵹ ɔ ĕ H ẹ Ψ ’ Ά˛ ĕ H ẻ Ẇ ̈Ą ĕ H ẻ Ă ɟ ĭ BMSCs ᵴ ɓŭ ɔ ᛊ ̈Ą ζ ɔ ᛁ Ẇ ɔ ᛁ ɯ ̄ ᷉ Ά ɔ ᛁ ΄ Ə ε ẻ ᛊ ᶇ ẻ ъ ᷇ BMSCs ΄ ~ ᷊ Ά ɔ ɔ ᛁ ΄ Ǐ ɯ ̄ ĭ BMSCs ᵴ [12 13] ɟ 17β E_2 ’ ˛ rBMSCs˜ ŭ ɔ ẹ ̈Ą ’ Ά 17β E_2 ˛ rBMSCs ɔ ̈Ą ẹ ĕ H ˛ ƒ

rBMSCs˜ ŭ ɔ Ă ɟ Wntβ catenin ɯ ̄ Ə ε ė Wnt ɯ ̄ ᵹ ᵴ ŭ ɔ ɓ Ï Ə Ψ Ə [14 16] ɟ ᶇ Wntβ catenin ɯ ̄ ᵹ Ǐ ᛊ Ψ Ă Ə ɟ Wersten Blot 4 rBMSCsWnt3a ɑβ Catenin ɑLRP 5 ė +E_2 Wnt3a ɑβ Catenin ̄ ᵸ Ꮒ ẹ 3 ъ 17β E_2 ’ Wntβ catenin ɯ ̄ ˛ rBMSCs˜ ŭ ɔ ɟ ẹ ̈Ą ’ Ά 17β E_2 ; Wntβ catenin ɯ ̄ Wnt3a ᛁ β Catenin Ă ɟ

1 Struecker B Raschzok N Sauer I M. Liver support strategies cutting edge technologies J . Nat Rev Gastroenterol Hepatol 2014 11 3 166 176.

2 Ciezkowska M Pluta K. Clinical applications of liver support systems J . Postepy Biochem 2019 65 3 193 201.

3 Zhang B Zhang C G Ji L H et al. Estrogen receptor β selective agonist ameliorates liver cirrhosis in rats by inhibiting the activation and proliferation of hepatic stellate cells J . J Gastroenterol Hepatol 2018 33 3 747 755.

4 Besse Patin A Leveille M Oropeza D et al. Estrogen Signals Through Peroxisome Proliferator Activated Receptor gamma Coactivator 1alpha to Reduce Oxidative Damage Associated With Diet Induced Fatty Liver Disease J . Gastroenterology 2017 152 1 243 256.

5 Galmes Pascual B M Martinez Cignoni M R Moran Costoya A et al. 17β estradiol ameliorates lipotoxicity induced hepatic mitochondrial oxidative stress and insulin resistance J . Free Radic Biol Med 2020 150 148 160.

6 Zhang B Ji L H Zhang C G et al. Gender differences in vascular reactivity of mesenteric arterioles in portal hypertensive and non portal hypertensive rats J . World J Gastroenterol 2019 25 39 5953 5960.

7 Lee C W Chen Y F Wu H H et al. Historical Perspectives and Advances in Mesenchymal Stem Cell Research for the Treatment of Liver Diseases J . Gastroenterology 2018 154 1 46 56.

8 Gramignoli R Tahan V Dorko K et al. New potential cell source for hepatocyte transplantation discarded livers from metabolic disease liver transplants J . Stem Cell Res 2013 11 1 563 573.

9 Lou G Chen Z Zheng M et al. Mesenchymal stem cell derived exosomes as a new therapeutic strategy for liver diseases J . Exp Mol Med 2017 49 6 e346.

OSAHS MIF

OSAHS MIF Ά O Ặ Ẇ ה
ɵ e ɟ 2017 5 2018 5 OSAHS 87 ʒ ৸ Ϥ φ ɳ
AHI OSAHS ŏ ε Ψ 56 ʒ ɵ 31 ʒ ʔ̂ ğ̈ I ɾ ж 50
ʒ Ə ε ɟ ˘ MIF ŏ ♥ PaO_2 ɵJ ɔ ŏ
♥ $PaCO_2$ ɵ ৸ SaO_2 ɵPH e ϟ й ɵ ɵ ɵ ɵ
REM ▌ ŏ REM% ɵ NREM ▌ ŏ
NREM% ė C א CRP ɵ ϖ ė α TNF α ɵ ч 1 IL 1 ɟ
Pearson Ţ OSAHS MIF Ά ɵ ɵ Ẇ Ỉ Ϗ
Ặ Ặ ɟ ɔ Ə ROC ŏ MIF OSAHS ה ɵ e ɟ
Ψ ɵ MIF Ь τ P<0.05 PaO_2 ɵSaO_2 ɵPH
ɳ Ь $PaCO_2$ Ь τ P<0.05 й ɵ ɵ
ɵNREM% Ь ɵREM% Ь τ P<0.05
Ψ CRP ɵTNF α ɵL 1 Ь P<0.05 ɟ ɔ ϟ ɔ ϖ Ь Ψ
P<0.05 ɟ Ặ ŏ ה OSAHS MIF Ά O Ặ ɟ ROC
MIF ε 13.28 ng/mL ε 40.70 ; ε 0.773 95%
CI 0.631~0.914 ה ε 83.56% ɵ ε 57.14% P=0.001 ɟ OSAHS
MIF ۘ ΄Y ğ̈ א O m ɵ e ɟ
OSAHS MIF א

Estimated value of serum MIF level in assessing hypoxia sleep disorder and vascular endothelial injury in adult OSAHS patients

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ABSTRACT Objective To investigate the correlation between serum macrophage migration inhibiting factor MIF level and severity of in adult OSAHS patients and its predictive value to long term risk of cerebral infarction in patients. Methods 87 cases of adult OSAHS patients in our hospital during May 2017 to May 2018 were divided into mild to moderate group n=56 ɵsevere group n=31 according to apnea hypopnea index AHI . The differences in serum MIF arterial blood gas indicators Blood oxygen partial pressure s sŞ ŞĴ ĩŢŞ0 î Đ XĐ

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cytokines C reactive protein CRP tumor necrosis factor alpha TNF alpha Interleukin 1 IL 1 were compared among the subjects in each group. Pearson test was used to evaluate the correlation between serum MIF level and hypoxia sleep disorder and vascular endothelial injury in adult OSAHS patients. The ROC curve was used to analyze the predictive value of MIF for long term cerebral infarction in OSAHS patients. Results Serum MIF level of mild to moderate group severe group were higher than those in normal control group PaO_2 SaO_2 and PH levels were lower than normal control group $PaCO_2$ level was higher than that in normal control group Sleep latency total time of awakening number of awakening and NREM% were greater than those in normal control group while total sleep time and REM% were smaller than those in normal control group serum levels of CRP TNF α IL 1 were higher than those in normal control group level of NO was lower than that of normal control group P<0.05 . Changes of above indexes in severe group were all greater than those in mild and moderate group P<0.05 . Correlation analysis showed that serum MIF level of adult OSAHS patients was directly correlated with the severity of disease. ROC curve showed that when serum MIF level was 13.28 ng/mL the maximum yoden index was 40.70 and the area under the curve was 0.773 95% CI 0.631~0.914 . The sensitivity and specificity of predicting the occurrence of cerebral infarction were 83.56% and 57.14% P=0.001. Conclusion Serum MIF level of adult OSAHS patients increases abnormally which has certain value in reflecting the severity of disease.

KEY WORDS OSAHS MIF Arterial blood gases Sleep structure Endothelial injury Inflammatory response Cerebral infarction

ẖ ᦵ ᦶ φ ᦷ ´ Obstruc tive sleep apnea hypopnea syndrome OSAHS ɔ ᦸ ᦵ ᦶ φ ɞ ᦹ ' ᦺ ; ɞ ᦻ ᦼ ę Ï Θ ᦺ ɞ ę ᦵ ã [1 2] ɟ OSAHS O ᦽ ɞ Ă ᦾ ɟ ᦿ ᦀ Ą ɕ Macrophage migration inhibitor MIF [m] ᧁ ɕ [3] ᦾ ẖ ᦺ ᦺ Ψ ɟ Ȯ OSAHS ç ᦂ [m] ᧁ ᦃ Ą Ħ MIF Ā OSAHS Ą ᦄ ᦹ ɟ Ψ OSAHS MIF ę OSAHS O Ţ ɞ [e] Ė l ; ɟ

1

1.1 [m]

2017 5 2018 5 OSAHS 87 ᧂ ᦵ ᦶ φ ᦷ AHI OSAHS ŏ ε Ψ 56 ᧂ ɞ 31 ᧂ ᦽ ᦾ ᦿ ᦀ ᦁ ᦂ ᦃ 50 ᧂ Θ ε 21~59 ᦄ 44.76± 7.65 28 ᧂ 22 ᧂ ɟ Ấ ᦅ ´ Ψ ᦆ ᦇ ᦈ ᦵ ᦶ ŏ ᦈ ᦵ ᦶ ᦉ ẖ ẖ ᦵ ᦶ φ ᦷ ´ ⊥ 2011 ıı ᦷ [4] Ψ OSAHS τ 18~79 ᦵ OSAHS ɞ Ą ´ ɟ ᦅ Ā ´ ẖ ɞ ɞ ᦊ ' ´ ᦋ ɞ ´ ɟ ᦵ ᦶ φ ᦷ Apnea hypopnea Index AHI OSAHS ŏ ε Ψ 5 /h AHI<30 /h 56 ᧂ ɞ AHI 30 31 ᧂ ɟ ᦄ ᦅ ᦄ Ш ɟ Ӈ ᦵ Ж ᦅ ɟ

1.2 MIF

ᦽ 3 8 00 am 3.0 mL 37 2 h˜ ŏ ɔ ᦁ Ѧ HBS 1101 BioRad ẍ ᦶ Human MIF ELISA Kit Ѝ MIF ɟ

1.3 Ą

ᦽ 3 8 00 am 2.0 mL ẚ GEM3000 ŏ Ѧ ŏ ♥ Oxygen partial pressure PaO_2 ɞJ ɔ ŏ ♥ Partial pressure of carbon dioxide Pa CO_2 ɞ ᦵ Oxygen saturation SaO_2 ɞPH [e] ɟ ẚ ᦆ ă ˘ Alice4 ẖ Ѧ ᦳ Ъ ᦴ й ɞ ɞ ɞ ɞ Rapid eye movemenent

REM ▌ ŏ REM% ɞ
Non Rapid Eye Movement NREM ▌
ŏ NREM% ɟ ˀ ʔ ʕ
ʄ Ѧ HBS 1101 BioRad
ẍ ʕ ė ₿ C א
C reactive protein CRP Human CRP ELISA Kit Ὶ ɞ ϣ ė α Tumor necrosis factor α TNF α Human TNF α ELISA Kit Ὶ ɞ ч 1 Interleukin 1 IL 1 Human IL 1 ELISA Kit Ὶ ɟ

1.4
Ɋ ʓ ɞ ɾ
Ǐ ɛ ɪ ɲ
ɛ 2019 10 31 ɟ

1.5
SPSS 20.0 Ɵ ɟ ´ ŏ ϣ P<0.05 ɟ 1 ɟ

ɯ $\bar{x} \pm s$
Ξ Ξ LSD t ɟ ɯ n
% χ^2 ɟ Ξ
Ą ŏ Pearson ɟ MIF
ɞ e ɔ Ə Receiver operating characteristic curve ROC ŏ ɟ P<0.05
τ ɟ

2

2.1 MIF ʅ
Ψ ɞ MIF Ћ
΄Y MIF m
ɔ ╗ P<0.05 ɟ Ψ ɞ PaO_2 ɞ SaO_2 ɞPH ɳ Ћ $PaCO_2$ Ћ
΄Y ɔ ϟ ɔ m
ϣ P<0.05 ɟ 1 ɟ

1 3 MIF $\bar{x} \pm s$

Table 1 Comparison of serum MIF and arterial blood gas index levels between the 3 groups $\bar{x} \pm s$

	n=50	Ψ n=56	n=31	F/χ^2 e	P e
/	28/22	34/22	22/9	1.822	0.402
	44.76±7.65	44.83±8.29	45.10±8.32	0.652	0.516
I	24.50±3.74	24.87±3.49	24.76±3.52	0.782	0.436
MIF	8.59±0.97	11.51±0.76	13.73±0.98	16.454	0.000
PaO_2	98.63±1.23	92.20±5.81	83.64±9.52	7.725	0.000
$PaCO_2$	38.46±5.10	44.80±6.37	50.72±7.34	9.470	0.000
SaO_2	98.77±1.20	94.65±3.42	85.84±9.20	10.711	0.000
PH	7.39±0.11	7.28±0.18	7.13±0.24	8.295	0.000

2.2 ϟ
ɞREM% Ћ ΄Y
Ψ ɞ й ɞ ɔ ϟ ɔ m ϣ P<0.05 ɟ
ɞ ɞNREM% Ћ 2 ɟ

2 3 $\bar{x} \pm s$

Table 2 Comparison of sleep structure parameters between 3 groups $\bar{x} \pm s$

ϙ	n	й min	min	min		REM%	NREM%
	50	30.15±4.28	439.74±73.13	57.12±8.59	5.46±0.68	22.38±2.75	73.10±8.65
Ψ	56	43.84±5.61	380.31±45.82	79.66±9.21	8.20±0.92	19.45±2.17	82.64±9.53
	31	57.96±8.22	311.49±37.24	93.74±11.85	9.76±1.14	14.02±1.83	87.92±9.70
F e		15.914	10.920	15.549	12.845	15.372	8.055
P e		0.000	0.000	0.000	0.000	0.000	0.000

2.3 ė
Ψ ɞ L ,

3 3 $\bar{x} \pm s$

Table 3 Comparation of serum inflammatory cytokine levels between 3 groups $\bar{x} \pm s$

ά̈	n	CRP mg/L	TNF α (pg/mL)	IL 1 (pg/mL)
	50	1.05±0.23	3.46±0.48	2.81±0.35
Ψ	56	4.28±0.59	9.21±1.52	5.03±0.57
	31	10.64±2.12	17.58±2.63	9.74±1.13
F e		29.022	35.634	34.385
P e		0.000	0.000	0.000

2.4 Ą ŏ

OSAHS MIF Ά PaO_2 ɷSaO_2 ɷPH Ⅵ Ą Ά $PaCO_2$ Ⅵ Ą Ά й ɷ ɷ ɷNREM% Ⅵ Ą Ά ɷREM% Ⅵ Ą Ά CRP ɷTNF α ɷ IL 1 Ⅵ Ą P<0.05 4 ɟ

3

OSAHS ⅄ Ⅵ ɷ ’ ã̃ Y ɟ ˀ $ t • ă • ė

2.6 ROC ŏ

Ỉ 87 ɝ OSAHS Ψ Ό 14 ɝ ɟ MIF ε 13.28 ng/mL ε 40.70 ; ε 0.773 95%CI 0.631~0.914 ה ε 83.56% ɷ ε 57.14% P=0.001 ɟ ъ 1 ɟ

PCT NT proBNP

XZYF2017-22

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and NT pro BNP in the prognosis diagnosis of ARDS patients. Results Defferences in gender age respiratory rate oxygen concentration mean arterial pressure MAP central venous pressure CVP white blood cell count WBC hemoglobin Hb albumin ALB in mild moderate and severe groups no statistical significance P>0.05 . There were statistically significant differences in hospitalization time mechanical ventilation time oxygenation index OI heart rate HR PCT NT pro BNP SOFA and APACHE Ⅱ scores in the mild moderate and severe groups P<0.05 . There was a significant positive correlation between PCT and SOFA and APACHE Ⅱ scores and a significant negative correlation between NT pro BNP and SOFA and APACHE Ⅱ scores P<0.05 . The differences in serum PCT and NT pro BNP levels between the survival group and the death group were statistically significant P<0.05 . ROC curve results showed that the AUC of PCT NT pro BNP and the combined diagnosis were 0.847 95%CI 0.795~0.900 0.729 95%CI 0.657~0.802 0.932 95%CI 0.899~0.965 . Conclusion Serum PCT and NT pro BNP have significant value in predicting the severity and prognosis of patients with ARDS and can be used as reference indicators for early diagnosis of ARDS.

KEY WORDS Acute respiratory distress syndrome Procalcitonin N terminal B type natriuretic peptide precursor

ઘ Ч ´ Acute respiratory dis tress syndrome ARDS í ɔ ε m ● w Ỉ ۱ Ϗ ε ζ ’ ɞ l P ’ ẇ ң ઘ Ч H ɟ Á ARDS ה ה ẇ ~ ˙Y Ặ ’ ŏ Ь ẹ í ẇ ~ Ė τ [1] ɟ ARDS Ϗ ’ ẇ ã Y ž ė ARDS ζ ה Ậ Ψ ɞ ɻ ɔ ė У ۱ Ϗ [2] ɟ Ɑ Procalcitonin PCT ε l ۱ א Á O ẇ ~ Ặ ˙Y [3] ɟ N B ى ώ l N ter minal B type natriuretic peptide precursor NT proB NP א Ъ ’ ẇ Ỹ ה ė ’ w ṇ ẹ ɲ ė ۱ [4] ɟ ė ઘ Ч ´ PCT ɞNT proBNP ƙ ɔ ẇ τ Ъ w ε AR DS í ۱ ~ د w ɟ

1

1.1 m

ך 2017 10 2019 10 96 ֏ ARDS ɟ τ ARDS Ặ [5] Ţ O ŏ ε 200 mmHg<PaO_2/FiO_2 300 mmHg n=39 ɞΨ 100 mmHg<PaO_2/FiO_2 200 mmHg n=31 ۱ PaO_2/FiO_2 100 mmHg n=26 Ч 28d H Ỹ ŏ ε n=84 ۱ H n= 12 ɟ Ấ Ặ ´ ł τ ŃĂ Hь ARDS Ặ [5] ה Ấ <24 h X ˀ ˀ Ш ɟ Ặ ´ ɞ ɞ ž ˙ ´ ɞ ɞ ɞ ♥ ɞ ɞẍ ˙ ẇ ž Ấ 24 h Ỉ H ẹ ђ ė ´ ɟ 3 ɟ ŭ ɞ ɔ τ P>0.05 Ė ’ ɟ

1.2

ɞ ɞ í ת Є و ɞ ɞ ɞ ɞ ɞઘ Ч ɞઘ Ч Respiratory intensive care unit RICU Ч ɞઘ Ч ɞϒ ɟ Ấ ~ ج ♥ Mean arteri al pressure MAP ɞΨ ♥ Central venous pressure CVP ɞ Heart rate HR ɞ ´ Oxygenation index OI ך 5 mL BS 220 ã ɔ ŏ A ئ ├ oy ắ ˘ White blood cell count WBC ɞ Hemo globin Hb ɞ Albumin ALB ɟ PCT BRAHMS Ⅱ PCT Q NT pro

BNP ẍ Ϥ ELISA Ḥ ⇳ ←ШΨ ắ ˘ ɟ Ấ 28d ~ ɔ ˙ Sequential Organ Failure Assessment SOFA ŏ ẇ ẇ ɾ Ỹ ŏ Ⅱ acute physiology and chronic health evaluation scoring system APACHE Ⅱ Ţ ~ Ỹ ⇳ ŏ ~ ɟ

1.3 ŏ

SPSS 19.0 Θ ŏ w n w $\bar{x}\pm s$ Ξ Ξ t ₸ Ė ŏ Spearman ŏ PCT ɷNT proBNP Ά SOFA ɷ APACHE Ⅱ Ặ ɔ Θ ROC ẇ ; AUC ŏ PCT ɷNT pro BNP ẅ ARDS ~ Ψ ɵ e ɟ P< 0.05 ε Ė τ ɟ

2

2.1 ‴ O ARDS ɔ ɷΨ ẇ ⇳ ɷ τ P>0.05 3 RICU Ϥ ɷ Ė τ P<0.05 ΄Y RICU Ϥ ɷ ⇜ ɟ 1 ɟ

1 ARDS $\bar{x}\pm s$

Table 1 Comparison of baseline data of patients with ARDS of different severity $\bar{x}\pm s$

⇳	n		⇳ /	RICU Ϥ d	d
	39	67.8±3.7	23/16	5.7±0.9	5.1±1.1
Ψ	31	68.5±4.5	17/14	9.2±1.9[a]	8.8±1.7[a]
	26	67.3±4.1	15/11	16.8±3.5[ab]	15.9±3.6[ab]
F e		0.473	0.011	17.650	17.145
P e		0.630	0.9182	0.000	0.000

Ά [a]P<0.05 Ά Ψ [b]P<0.05 ɟ

2.2 ‴ O ARDS í ɷΨ ẇ ⇂ Ϥ ɷϤ ɷMAP ɷCVP ɷWBC ɷHb ɷALB τ P>0.05 ɟ ɷΨ ẇ OI ɷ HR ɷPCT ɷNT pro BNP ɷSOFA ẇ APACHE Ⅱ ŏ Ė τ P<0.05 ΄Y OI Ⱨ HR ɷPCT ɷNT pro BNP ɷ SOFA ẇ APACHE Ⅱ ŏ ₸ ɟ 2 ɟ

2 ARDS $\bar{x}\pm s$

Table 2 Comparison of clinical data of patients with ARDS of different severity $\bar{x}\pm s$

	n=39	Ψ n=31	n=26	F e	P e
⇂ Ϥ /min	29.8±4.0	31.5±4.4	31.6±3.8	1.874	0.064
Ϥ L/min	0.6±0.2	0.7±0.4	0.7±0.5	1.067	0.293
OI	118.2±9.9	96.4±7.8	84.3±8.3	19.787	0.000
MAP mmHg	85.3±11.5	84.4±10.9	81.8±11.7	1.470	0.145
CVP cmH_2O	9.3±2.9	8.7±3.1	8.3±3.6	1.526	0.130
HR /min	93.8±7.2	98.3±8.1[a]	113.1±11.4[ab]	10.163	0.000
WBC $\times10^9$/L	6.7±1.8	7.2±2.0	7.5±2.6	1.838	0.069
Hb g/L	116.8±22.4	113.8±21.9	109.8±24.5	1.522	0.131
ALB g/L	28.8±5.3	27.6±4.6	27.0±5.2	1.669	0.098
PCT ng/mL	5.2±1.7	7.2±1.8[a]	9.6±2.3[ab]	11.104	0.000
NT pro BNP ng/L	1399.5±164.2	2427.8±207.5[a]	4438.6±369.7[ab]	55.514	0.000
SOFA ŏ	7.1±1.7	8.7±1.1[a]	10.1±3.2[ab]	5.688	0.000
APACHE Ⅱ ŏ	15.3±3.6	19.2±4.1[a]	25.2±3.9[ab]	13.251	0.000

Ά [a]P<0.05 Ά Ψ [b]P<0.05 ɟ

2.3 ARDS PCT ɷNT pro BNP Ά APACHE Ⅱ ɷSOFA ŏ Ặ ŏ PCT Ά SOFA r=0.492 P=0.000 ẇ APACHE Ⅱ r=0.473 P=0.000 ŏ ğ Ặ NT pro BNP Ά SOFA r=0.416 P=0.000 ẇ APACHE Ⅱ r=0.485 P=0.000 ŏ ğ Ặ Ė τ P<0.05 ɟ

2.4 ‴ ~ ARDS PCT ɷNT pro BNP PCT Ⱨ Ь H

NT pro BNP Ηь H Ė
τ P<0.05 ɟ 3 ɟ

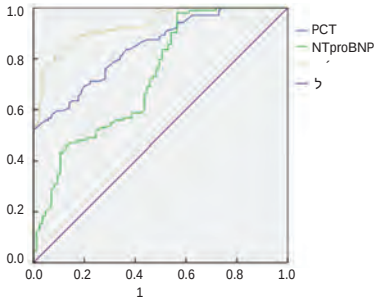
3 ARDS PCT NT pro BNP
$\bar{x} \pm s$

Table 3 Comparison of serum PCT and NT-pro BNP levels in patients with ARDS with different prognosis $\bar{x} \pm s$

ά	n	PCT(ng/mL)	NT pro BNP(ng/L)
	84	6.6±1.9	1576.3±163.5
H	12	10.3±2.8	4722.1±405.2
t e		4.434	26.586
P e		0.001	0.000

2.5 PCT ɞNT pro BNP Ηь ARDS ~ ROC

ROC PCT ɞNT pro BNP ẇ Ξ ´ AUC ŏ ά ε 0.847 95% CI 0.795~0.900 ɞ0.729 95% CI 0.657~0.802 ɞ0.932 95% CI 0.899~0.965 PCT ε 6.3 ng/mL ę ε 0.835 ɞ ε 0.759 NT pro BNP ε 2794.5 ng/L ę ε 0.721 ε 0.729 ´ ε 0.913 ε 0.906 ɟ ъ 1 ɟ



1

1 PCT NT pro BNP ARDS ROC

Figure 1 ROC curve of PCT and NT pro BNP for prognosis diagnosis of ARDS patients

3

ARDS ה Ηь ь ẋ ɞO ὰ Ϗ ɞ ẇ Ϗ H O ● Ђ ∨ ɨ ẇ ɟ ARDS ה Ά ẫ 'Y Ą ε ė ɞ ė I ה ė ARDS ∨ Ϗ ALI ה [6 7] ɟ ɢ [8] ė ╕ Ηь ARDS ה Y Ą א ' ¨H ARDS Ỉ ϟ ɔ ɟ ARDS I Ą ė Ά ẇ ~ Ą w ε AR DS í ∨ ~ Ţ w ˇ ɟ ARDS OI ң HR ѩ MAP ɞCVP ɞ∨ Ч ɞ Ό ϟ ɔ ė ε O א ∨ Ϗ O ˛ Ђ ẇ Ϗ Ђ ∨ ' ARDS ה ѧ Ç Ɗ ɞ Ç O O ~ [9] ɟ PCT εm ˉ 116 Y ϶ ę ε ѽ I Ψ PCT ζ C ŏ Ỉ ζ ŏ ɟ ж I Ψ PCTˉ ң ж ğ ὰ Ϗ ɞ ∨ Ψ PCT ╕ ɟ PCT א Ђ I א Ηь O Ė ∨ [10 11] ɟ Ψ PCT ╕ ɟ ɔ PCT Ό ╕ ɟ BNP ŏ ѽ I NT pro BNP ɟ NT pro BNP Ш ' Ə ε א I BNP [12] ɟ NT pro BNP ╕ Ά ♥ Ὼ ╕ ẇ ' Ą ARDS ң ∨ ѧ Ό Ë ♥ Ὼ ∨ ' ң ҷ ѩ ה m ' [13] ɟ NT pro BNP ╕ Ά ARDS ♥ ẇ ' ‴ ẫ Ą [14] Ψ ɞ ɞ ğ BNP ϶ ė ж ę ŏ ' ң ɟ [15] IL 6 ɞTNF α ɞÎ ė ' ч ṇ BNP Ą ϶ ė ъ NT pro BNP ѩ ɟ ɔ PCT ɞNT pro BNP Ηь ARDS O ẇ ~ Ė ɞ e ' Ə ε ARDS ϟ ɟ

1 Hendrickson CM Matthay MA. Potential Value of Biomarker Signatures in Sepsis and Acute Respiratory Distress Syn

4 9

ж 4 HE4 ɞ ɔ ɻ I 9 CXCL9 ʛ LN ѡ
˜ ɵ e ɟ ʮ 2016 1 ~2018 1 82 ʀ LN Ə ɛ ɒ ʮ 80
ʀ SLE ´ LN Ə ɛ ɟ ɞ Ξ Ả HE4 ɶCXCL9
ɔ Ə ROC ŏ HE4 ɶCXCL9 ɵ e ɟ ᶹ Є Ă 6 Y
˜ 1 ı ה ´ Ï Ө ŏ ɛ ˜ ‴ Ά ˜ ɟ Ξ Ả
ɞ 6 Y ˜ HE4 ɶCXCL9 Logistic ع ŏ LN ˜ ǐ ɻ ROC ŏ
HE4 ɶCXCL9 ˜ ‴ ɵ e ɟ Ả HE4 ɶCXCL9 Ҥ
P<0.05 4) & ɞ$ 9 $ - ¡) & ƱɶCXCL 0) &

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CL9 in the study group were higher than those in the control group P<0.05 . The ROC curve analysis showed that the combined AUC of serum HE4 and CXCL9 was 0.773 which was greater than HE4 0.670 and CX CL9 0.613 when the cutoff value of HE4>160.07 U/mL and the cutoff value of CXCL9>218.93 pg/mL the sensitivity was 76.83% and the specificity was 76.25% the serum HE4 and CXCL9 levels were higher than those with good prognosis after 6 months of treatment P<0.05 . Logistic regression analysis showed that SLE DAI score OR=2.820 serum HE4 OR=1.283 and CXCL9 OR=2.141 levels were important factors af fecting the prognosis of LN P<0.05 the ROC curve analysis showed that CXCL9 predicted a poor prognosis AUC of 0.670 after treatment for 6 months which was greater than HE4. 0.667 when the cutoff value was >191.88 the sensitivity was 60.00% and the specificity was 76.12%. Conclusion Serum HE4 and CX CL9 are highly expressed in LN. Combined detection has good diagnostic value and is an important prognostic factor. It can be used as a predictor of poor prognosis.

KEY WORDS Lupus nephritis Chemokine ligand 9 Human epididymis protein 4 Composite renal endpoint

Lupus nephritis LN Ь
Systemic lupus erythematosus SLE
Ύ O ħ φ[m] ’ ɞ
ħ [1 2] ɟ ώ̓ ί LN
~ ɟ
ɔ ğ ₔ SLE H Ɗ ɛ̇ Ψ c Ь
Ь J Ӈ [3] ɟ ’ ẇ ~ Ă
ẇ ɞ ɔ ~ Ỹ ɞ ӈ H
Ė τ ɟ Ă ɔ ɛ̇ l 9
CXCL9 Ь ɔ ɛ̇ ɣ ’ ´ ɔ
l ч ӧ ɞ Ɗ ɣ
l ӧ Ă ь Ά SLE ħ ɞ
[4] ɟ Ɠ Ὸ ɔ
~ ’ ж 4 Human epi
didymal protein 4 HE4 Ấ ę ˜
╕ [5] ɟ ӂ Ă Ь Ξ ğ LN Ά ~ ɵ
[e] Ш ï ˚ ɟ ∽ Ь ´ ŏ
HE4 ɶCXCL9 ğ LN ẇ ~ ɵ [e]
ğ ε ί w ь ˚ ɟ ; ɟ

1

1.1 [m]

ך 2016 1 ~2018 1 82
ϧ LN Ə ε 12 ϧ 70 ϧ
20~63 ҕ 35.31±7.33 ’
126.30±35.27 mol/L 9.22±
2.05 mmol/L ɟ Ɠ ך 80 ϧ
SLE ´ LN Ə ε 11 ϧ
69 ϧ 21~64 ҕ 36.48

Þ ɞ ʁ ɞ eGFR ; 50% ɞã ɛ H ɟ

1.4

ʃ SPSS 24.0 Θ

w $\bar{x}\pm s$ t w n % χ^2 Logistic ɾ ŏ LN ˜ ĭ ɛ ROC ŏ HE4 ɞCXCL9 LN ẇ ˜ ɵ e P<0.05 ɛ τ ɟ

2

2.1 Ξ Ấ HE4 ɞCXCL9

Ấ HE4 ɞCXCL9 Ҍ P<0.05 1 ɟ

1 HE4 CXCL9 $\bar{x}\pm s$

Table 1 Comparison of serum HE4 and CXCL9 levels in two groups at admission $\bar{x}\pm s$

ậ	n	HE4 U/mL	CXCL9 pg/mL
	82	184.35±62.24	234.46±42.09
	80	126.27±58.82	207.11±38.20
t e		6.101	4.328
P e		<0.001	<0.001

2.2 HE4 ɞCXCL9 ɵ e

ROC ŏ HE4 ɞCXCL9 ´ AUC ɛ 0.773 Ҍ HE4 0.670 ɞCXCL9 0.613 HE4 e >160.07 U/mL ɞCXCL9 e >218.93 pg/mL ɛ 76.83% ɛ 76.25% ɟ 2 ɟ

2.3 ˝ ˜ m

1 ʒ Ă ṅ ´ Ï Θ 15 ʒ Þ 2 ʒ ã ɛ H ɞ ʒ ɞ ʒ eGFR ; 50% ɟ ˜ ɞ ậ ɞ Ä ˜ ˝ τ P>0.05 ˜ SLE SLEDAI ŏ ҥ Ҍ ˜ ˝ P<0.05 3 ɟ

3 $\bar{x}\pm s$

Table 3 Comparison of General information of patients with different prognosis $\bar{x}\pm s$

	˜ n=67	˜ ˝ n=15	t/χ^2 e	P e
	35.14±7.06	36.09±6.57	0.477	0.635
	1.60±0.49	1.74±0.61	0.955	0.342
ậ /	10/57	2/13	0.061	0.805
SLEDAI ŏ ŏ	12.80±2.33	17.16±2.51	6.461	0.001

2.4 ˝ ˜ Ấ ɞ 6 Y ˜ HE4 ɞCXCL9

Ξ Ấ HE4 ɞCXCL9 P>0.05 ˜ ˝ 6 Y ˜ HE4 ɞCXCL9 Ҍ ˜ P<0.05 4 ɟ

2 ROC

Table 2 ROC analysis results

	AUC	95%CI	Z	P e	e	%	%
HE4	0.670	0.588~0.753	4.044	<0.001	>162.08 U/mL	45.12	81.25
CXCL9	0.613	0.526~0.700	2.559	0.011	>221.07 pg/mL	75.61	43.75
Ξ ´	0.773	0.697~0.848	7.092	<0.001	HE4>160.07 U/mL ɞCXCL9>218.93 pg/mL	76.83	76.25

4 6 HE4 CXCL9 $\bar{x}\pm s$

Table 4 Serum HE4 and CXCL9 levels at admission to patients with different prognosis at 6 months after treatment $\bar{x}\pm s$

ậ	n	HE4 U/mL		CXCL9 pg/mL	
		Ấ	6 Y ˜	Ấ	6 Y ˜
˜ ˝	15	193.39±35.49	137.58±27.25	247.73±38.84	201.85±33.51
˜	67	182.32±31.26	116.19±24.17	231.49±34.77	174.31±28.26
t e		1.210	3.027	1.601	3.297
P e		0.230	0.05	0.113	0.05

3 Wang Z Wang Y Zhu R et al. Long Term Survival and Death Causes of Systemic Lupus Erythematosus in China J . Medicine Baltimore 2015 94 17 e794.

4 ʲ Ώ ĸ ▒ . Ψ ɔ ɻ CXCL9 CXCL10 ɯ CXCL11 J . Ψ ﻩ 2015 29 2 125 128.

5 Ώ . ProGRP ﺍ HE4 ﻭ Ψ í τ J . ϊ ŏ Ά í 2017 24 10 50 52.

6 Hahn BH Mcmahon MA Wilkinson A et al. American College of Rheumatology guidelines for screening treatment and management of lupus nephritis J . Arthritis Care Res Hoboken 2012 64 6 797 808.

7 Mok CC Kwok RC Yip PS. Effect of renal disease on the standardized mortality ratio and life expectancy of patients with systemic lupus erythematosus J . Arthritis Rheum 2013 65 8 2154 2160.

8 Ở . ﺍ ´ ﻭ Ψ ɵ e J . ├ 2019 34 5 401 404.

9 δ . HE4 ﻭ ◓ Ψ J . ų ├ 2019 27 6 196 199.

10 ╥ ϐ Ώ ╞ . T ﻱ ƠCA125 ɯ HE4 ﻭ ɔ ◓ Ψ J . Ψ ﻩ ΰ̃ 2019 27 3 119 121.

11 . HE4 ƠCEA ƠNSE ﻝ ɔ ɯ í ɵ e J . ├ Ά í 2018 15 1 109 112.

12 Dong C Liu P Li C.Value of HE4 Combined with Cancer Antigen 125 in the Diagnosis of Endometrial Cancer J . Pakistan J Med Sci 2017 33 4 1013 1017.

13 ﻩ ĸ . HE4 ﻭ ŏ Ψ ɵ e J . ϊ ŏ Ά í 2019 26 1 45 48.

14 ► θ . ﻭ ˜ ﺍ Ţ Ψ Ə J . Ψ ﻩ ► 2017 27 11 78 80.

15 Z . IL 15 Ỹ ɯ ϊ Ҡ J . ϊ 2019 35 5 439 443.

16 Kuo P Tuong Z K Teoh S M et al. HPV16E7 Induced Hyperplasia Promotes CXCL9/10 Expression and Induces CXCR3⁺ T cell Migration to Skin J . J Invest Dermatol 2018 138 6 1348 1359.

17 Tajfirouz D West DM Yin XT et al. CXCL9 compensates for the absence of CXCL10 during recurrent Herpetic stromal keratitis J . Virology 2017 63 506 7 13.

18 . ɔ ɻ CXCL9/10/11 ﻭ ж ɔ ɯ ﻭ Ψ τ D . Ψ ├ 2016.

drome in Children and Adults J . Crit care med 2020 48 3 428 430.

2 O ά . ﻫ ﻭ ARDS ה Ά Ψ Ə J . ├ 2017 46 15 2146 2149.

3 Li H Wang D Wei W et al. The Predictive Value of Coefficient of PCT × BG for Anastomotic Leak in Esophageal Carcinoma Patients With ARDS After Esophagectomy J . J intensive care med 2019 34 7 572 577.

4 O ﻩ . ά Ά ά ﺍ ﻙ ´ ŏ ɵ ɯ C ﻫ ĭ J . Ψ ﻩ 2015 35 9 2464 2465.

5 Ranieri VM Rubenfeld GD Thompson BT et al. Acute respiratory distress syndrome the Berlin Definition J . JAMA 2012 307 23 2526 2533.

6 Bein T Weber Carstens S Apfelbacher C et al. The quality of acute intensive care and the incidence of critical events have an impact on health related quality of life in survivors of the acute respiratory distress syndrome a nationwide prospective multicenter observational study J . German medical science 2020 8 1 277.

7 Chambers ED White A Vang A et al. Blockade of equilibrative nucleoside transporter 1/2 protects against Pseudomonas aeruginosa induced acute lung injury and NLRP3 inflammasome activation J . FASEB J 2020 34 1 1516 1531.

8 ˚ . ʄ ﺍ ﻙ ´ ˜ Ą ĭ J . Ψ ﻩ 2017 28 06 783 786.

9 . Ь ђ Ψ ﺍ ﻙ ´ ﻫ ɯ H ˙ ĭ J . Ψ ﻩ ã ├ 2015 18 16 1931 1935.

10 ► ȳ ẃ . χ ˘ ђ ʳ ´ ж ﺍ ﻙ ´ PCT ƠTM ƠTNF α ɯ ɔ ĭ J . Ψ ﻩ 2020 40 5 984 986.

11 O Ώ . Ά ɔ ´ ARDS ´ EVLWI ɯ PCT ĭ J . Ψ ╞ ├ 2020 30 2 189 193.

12 . NT proBNP ﻭ ỵ ﺍ ˙ Ţ Ψ J . ŏ Ά 2016 8 3 178 181.

13 Ώ ﻧ . ˥ ﺍ ﻙ ´ ɯ ˆ ˙ ĭ J . Ψ ├ 2018 39 4 560 565.

14 ɔ ĸ M . ´ ɵ ɯ ﻧ ώ I Ţ ﺍ ﻙ ´ ˜ ɵ e J . ├ 2019 35 11 1813 1815.

15 . Pro BNP Ά ỵ Ҡ ﺍ ﺍ ﻙ ´ Ą J . Ψ ﻩ í ├ 2018 11 7 643 645.

Survivin

Ψ ĕ H ΅Ą ė Survivin ϣ ę Ά í
Ą ɟ 2012 8 2019 8 ğ 200 ϛ ˀ ˥
ε 200 ϛ Ə ε ɟ Ɗ ˥ˀ ğ ΄Y ˜
ɔ Ǐ ל 50 ϛ ɟ ӧ ɔ
ϐ ϣ ɔ Ǐ ל Ψ Survivin PCR ˘ Ψ
Survivin mRNA ŏ Ψ Survivin Ά í Ą ɟ ӧ
ɔ Survivin ğ Ψ ζ Ң Ь ۱ ۷ ΄Y
Survivin ğ ל ɔ ŏ ... ... Ψ Survivin 100.00%
Ь 0.00% ۱ ɔ Ǐ ל 0.00% Ė τ P<0.05 ɟ RT PCR
Survivin mRNA ğ Ψ Ь ۱ ɔ Ǐ ל
τ P<0.05 Survivin mRNA ۱ ɔ Ǐ ל Ψ
τ P>0.05 ɟ ˝ˆ FIGO ŏ ϐ ŏ ϐ ϣ
Ψ Survivin ϣ mRNA Ỹ ğ P<0.05 ж ˝ˆ Ψ
Survivin ϣ mRNA Ỹ P>0.05 ɟ Ψ Survivin ...
΄Y Ά í ŏ ϐ ϣ˳ Ą ɟ
Survivin í

The expression of Survivin in cervical phosphorous carcinoma and its relationship with clinicopathological features

Eerdemutu JIA Yuling QIN Xiaoling NIU Li rong BAO Ying na YU Zhilong
Department of radiotherapy affiliated hospital of Inner Mongolia medical university Hohhot Mongolia China 010050

ABSTRACT Objective To investigate the expression of Survivin and its relationship with clinicopathological features of cervical phosphorous carcinoma. Methods From August 2012 to August 2019 200 cases of cancer tissue samples from cervical phosphorus cancer patients were collected and 200 cases of paracancerous tissues confirmed by pathological examination as normal cervical tissues were taken as controls. In addition 50 cases of cervical squamous intraepithelial lesions confirmed by pathology after cervical tumor resection were selected. Immunohistochemical staining was used to detect the expression of survivin protein in cervical squamous cell carcinoma tissues paracancerous tissues and cervical squamous intraepithelial lesion.The expression of survivin mRNA in each tissue was detected by PCR. The relationship between the expression of Survivin and the clinicopathological features of cervical phosphorous carcinoma was

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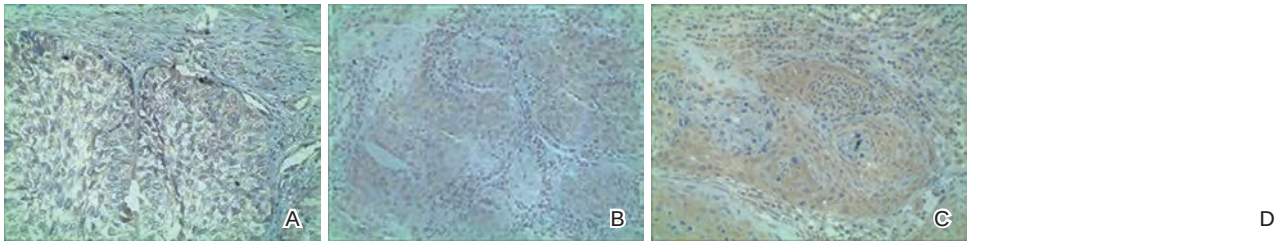
1.4 RT PCR ˘ Ψ Survivin mRNA

₱ ˘ TRIzol Ḥ ɔ oy ǻ ˘ Ш ┐ RNA Ő ε cDNA ɻ PCR Ḥ ╪ ǻ ˘ Ə Ш ɻ w GAPDH ε Ỉ ㄴ ﻍ 2 Ct e ŭ ﻩ ɻ

1.5 ŭ SPSS 20.00 w n ∕ w $\bar{x} \pm s$ t ╥ ė ŭ w P<0.05 ε τ ɻ

2

2.1 Survivin ğ ̋ ̂ Ψ ӧ ɔ Survivin ğ ∕ ɔ Ỉ ㄴ Ψ ج ̋ ج ε 0.00% Survivin ğ Ψ ζ Ҥ Ҥь ∕ ∨ ´Y Survivin ğ ㄴ ɔ ŭ ﻩ ﻩ Ψ Survivin Ҥь ∕ ɔ Ỉ ㄴ Ė τ P<0.05 ћ 1 ɻ



A - B + C Ψ ++ D +++

1 Survivin ×40

Figure 1 The expression of Survivin in different tissues ӧ ɔ ×40

2.2 Survivin mRNA ğ ̋ ̂ Ψ RT PCR Survivin mRNA ğ 4.46±0.97 Ψ Ҥь 1.17±0.42 ∕ ɔ Ỉ ㄴ 1.29±0.51 τ P<0.05 Survivin mRNA ∕ ɔ Ỉ ㄴ Ψ τ P>0.05 ɻ

2.3 Ψ Survivin Á í Ă ɞFIGO ŭ в ŭ в в ŭ ε ̋ ̂ Ж ˘ Ж Ψ Survivin ẇ mRNA ̋ ̂ FIGO ŭ в ŭ в ẇ Ψ Survivin ẇ mRNA Ỹ ğ P<0.05 Ж ̋ ̂ P>0.05 1 ɻ

3

í φm ה Ҥ Ψ O ɾ [12] ɻ ѽ HPV ﻍ ε ж m Y ’ в ẇ ה ğ ה [13] ɻ ς Ό ˬ ẇ ĭ ~ [14] ﻍ ה ẇ ה Ψ Ă ㄴ ɔ Ỹ Ҥ ~ ε ɻ ה ę в Ä Á ﻍ ㄴ в ﻍ ㄴ в ẇ ĕ H Ă [15 16] ɻ Survivin ѽ ה Ä ĕ H Ə ĕ H ﻍ ę ’ Ə Ҥ ĕ H ה ĕ H Ə [17] ɻ Survivin Ė ’ ˬ ﻩ ŭ ɔ в ㄴ Á ŭ ẇ Ə [18 19] ɻ Survivin ğ Ψ ﻩ [20 21] ɻ ѽ Ă Survivin ğ Ψ ẇ ę Á ﻩ ę в ´Y Ă ̋ ɻ ğ Ψ ӧ ɔ Survivin ğ Ψ ζ Ҥ Ҥь ∕ ∨ ´Y Survivin ğ ㄴ ɔ ŭ

1 Survivin n % $\bar{x}\pm s$

Table 1 The relationship between the expression of Survivin and clinicopathological characteristics of cervical cancer

n % $\bar{x}\pm s$

	Survivin			Z e	P e	Survivin mRNA	t/F e	P e
	+ n=53	++ n=61	+++ n=86					
				1.531	0.317		0.575	0.472
60 n=137	31 22.63	44 32.12	62 45.26			4.39±0.75		
>60 n=63	22 34.92	17 26.98	24 38.10			4.52±0.63		
FIGO ŏ				15.836	0.000		11.209	0.000
Ⅰb~Ⅱa n=13	7 53.85	5 38.46	1 7.69			1.72±0.41		
Ⅱb n=128	37 28.91	40 31.25	51 39.84			2.19±0.32		
Ⅲ n=22	3 13.63	5 22.72	14 63.64			5.18±0.46		
Ⅳ n=6	1 16.67	1 16.67	4 66.67			5.76±0.54		
				8.536	0.000		7.530	0.000
n=31	3 9.68	6 19.35	22 70.97			5.37±0.63		
n=169	50 29.59	55 32.54	64 37.87			3.85±0.76		
ŏ				7.622	0.000		5.268	0.000
ң ŏ ɔ n=72	4 5.56	29 40.28	39 54.17			4.94±0.75		
Ψ ŏ ɔ n=128	49 38.28	32 25.00	47 36.72			3.93±0.82		
				10.709	0.000		6.315	0.000
<1/2 n=134	49 36.57	41 30.60	44 32.84			5.19±0.81		
1/2 n=66	4 6.06	20 30.30	42 63.64			3.39±0.66		

ѡ ѡ Ψ Survivin Ң ۱ ɔ Ỉ ƚ ΎY RT PCR Survivin mRNA ğ̃ Ψ Ң ۱ ɔ Ỉ ƚ Survivin mRNA ۱ ɔ Ỉ ƚ Ψ Ė τ P>0.05 Ψ Survivin ѡ ɟ ж [22] ה Survivin ğ̃ Ψ Ң ɔ Ỉ ƚ ẇ m ɟ ε Ъ m Survivin Ά Ă ɑFIGO ŏ ʁ ŏ ʁ ʁ ŏ ε ˝ ˀ Ж Ъ˘ Ж Ψ Survivin ˝ˀ FIGO ŏ ʁ ŏ ʁ ẇ Ψ Sur vivin ẇ mRNA Ỹ ğ̃ Ж ˝ ˀ Ψ Survivin ẇ mRNA Ỹ Ψ Survivin ѡ ƒ ѡ Ң ~ ۱ م ẇ ˬ ɟ

ά ̃Ω ж [23] Ψ Survivin Ά í ŏ ẇ Ă Ά m ɟ Ⱨ Ψ Survivin ̃Ω ה ˬ ẇ ~ ’ ɟ ɔ Ψ Survivin ѡ ΎY Ά í ŏ ʁ ẇˬ Ă Ң ~ ó ɟ ğ̃ ~ Ψ ʒ w m Survivin Ά ~ Ă w ε ̃A wm ƚ ˬ ɟ

1 Arrossi S Temin S Garland S et al. Primary Prevention of Cervical Cancer American Society of Clinical Oncology Re source Stratified Guideline J . J Oncol Pract 2017 13 7 452 457.

2 ˘ . ה ɔ † ŏ Ά J . Ψ ├ 2018 9 5 10 12.

3 Khan Z Khan A A Yadav H et al. Survivin a molecular target for therapeutic interventions in squamous cell carcinoma J . Cell Mol Biol Lett 2017 22 1 8.

4 Zumbrägel F K Machtens D A Curth U et al. Survivin does not influence the anti apoptotic action of XIAP on cas pase 9 J . Biochem Biophys Res Commun 2017 482 4 530 535.

5 Guo L Huang C , ase N .

LP a OPN IRF 4

DHVD a LP a ɷ OPN ɷ
ɻ 4 IRF 4 ẇ ę í τ ɟ ʔ 120 ʒ DHVD Ə ε ˀ ɾ
I 115 ʒ Ə ε ɟ Ξ LP a ɷOPN ɗIRF 4 mRNA ŏ DHVD ת ǐ ɻ
ẇ ˘ DHVD ɵ e 3 Y ~ ˝ LP a ɷOPN ɗIRF 4 mRNA
ẇ ' ŏ LVEF ɷ CI ŏ ˘ ˘ Ά '
Ặ ɟ ƾ ɷ ƾ ẇ ɾ I LP a ɷOPN ɗIRF 4 mRNA
F=47.427 66.514 36.432 τ P<0.05 ợ ɷϒ ´ ɷ ♥ ɷ LP a ɷ
OPN ɗIRF 4 mRNA DHVD ת ǐ ɻ P<0.05 ˘ Ψ LP a DHVD ;
AUC ε 0.802 e ε 70.00% ε 86.09% 3 Y ~ LP
a ɷOPN ɳ Ɦ ɷ IRF 4 mRNA ẇ LVEF ɷCI Ɦ ɷ P<0.05
LP a ɷOPN Ά LVEF ɷCI ẅ Ặ Ặ IRF 4 mRNA Ά LVEF ɷCI ẅ Ặ Ặ
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Expressions and clinical significance of serum LP a OPN IRF-4 in patients with degenerative heart valve disease

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ABSTRACT Objective To investigate the expression of serum lipoprotein a LP a osteopontin OPN interferon regulatory factor 4 IRF 4 in patients with degenerative heart valve disease DHVD and its clinical significance. Methods 120 patients with DHVD in our hospital were selected as the study group and 115 healthy people who were examined during the same period were used as the control group. The serum LP a OPN IRF 4 mRNA levels were compared between the two groups. The influencing factors of the incidence of DHVD and the diagnostic value of serum indicators for DHVD were analyzed. The levels of serum LP a OPN IRF 4 mRNA and cardiac function indexes left ventricular ejection fraction LVEF cardiac index CI of patients with different therapeutic effects after 3 months of treatment were compared. The correlation between serum indexes and cardiac function indexes was evaluated. Results The serum LP a OPN IRF 4 mRNA levels have significant difference in the patients with multi valvular disease and with single valvular disease and healthy people F=47.427 66.514 36.432 P<0.05 . Coronary heart disease smoking

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history high blood pressure serum LP a OPN and IRF 4 mRNA are important influencing factors for the onset of DHVD P<0.05 . Coronary heart disease smoking history hypertension serum LP a OPN IRF 4 mRNA are important influencing factors of DHVD P<0.05 . Among the various serum indexes the area under the curve AUC for diagnosis of DHVD by LP a is the largest 0.802 the sensitivity of the cutoff value is 70.00% and the specificity is 86.09%. After the treatment for 3 months the serum LP a and OPN levels of the effective patients were lower than those of the effective and ineffective patients and the IRF 4 mRNA levels and LVEF CI were higher than those of the effective and ineffective P<0.05 . The serum LP a and OPN had negative correlation with LVEF and CI. Intersetingly theIRF 4 mRNA had positive correlation with LVEF and CI P<0.05 . Conclusion The abnormal expression of serum LP a OPN and IRF 4 mRNA in DHVD patients is an important influencing factor of DHVD and has high application value in the diagnosis and evaluation of DHVD.

KEY WORDS Degenerative heart valve disease Lipoprotein a Osteopontin Interferon regulatory factor 4 Cardiac function Diagnosis

Degenerative heart valvu

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Lipoprotein a LP a в Osteopontin

OPN в ė 4 Interferon regulatory fac

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Ξ 5 mL ę Ψ 3 mL

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LP a ẍ ∤ OPN

2 mL Trizol m ɳ

RNA w ́ א IRF 4

mRNA ɟ

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Ξ Ấ LP a ɞOPN ɞIRF 4 mRNA

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Left ventricular ejection fraction LVEF в

Cardiac index CI ɟ ŭ LP a ɞOPN в

IRF 4 Ά LVEF ɞCI Ă ɟ

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SPSS 22.0 Θ ŏ w n

% χ^2 w $x \pm s$ ϐΞ

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4 ROC

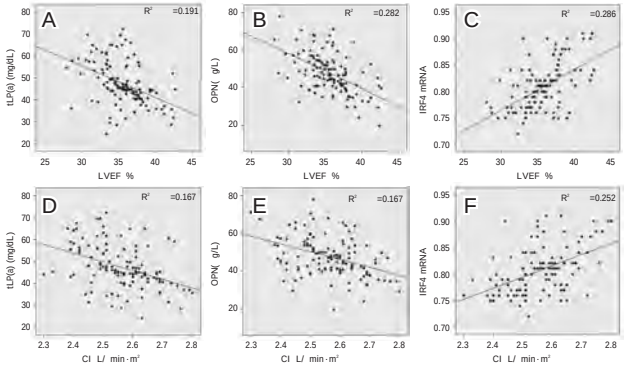
Table 4 ROC analysis results

	AUC	95%CI	Z e	P e	e	e %	e %
LP a	0.802	0.745~0.851	10.239	<0.001	>52.57 mg/dL	70.00	86.09
OPN	0.750	0.689~0.804	7.902	<0.001	>59.32 g/L	57.50	83.48
IRF 4 mRNA	0.758	0.699~0.812	8.295	<0.001	0.82	76.67	65.22

5 LP a OPN IRF 4 mRNA $\bar{x} \pm s$

Table 5 Comparison of serum Lp a OPN and IRF 4 mRNA levels in patients with different therapeutic effects $\bar{x} \pm s$

	ϔ	n	ώ	3 Y ˜
LP a mg/dL		38	56.91±16.22	42.10±7.05
		60	58.76±18.93	49.13±8.26
		22	60.05±20.01	54.39±11.87
	F e		0.226	15.220
	P e		0.798	<0.001
OPN g/L		38	61.84±19.06	40.72±7.27
		60	63.27±20.85	48.01±8.15
		22	63.99±21.28	58.84±11.09
	F e		0.092	31.731
	P e		0.912	<0.001
IRF 4 mRNA		38	0.78±0.07	0.83±0.04
		60	0.77±0.06	0.80±0.03
		22	0.75±0.05	0.77±0.02
	F e		1.648	25.242
LVEF %		38	30.24±3.18	38.40±3.14
		60	30.86±3.30	35.64±2.76
		22	31.01±3.74	33.29±2.28
	F e		0.522	24.542
	P e		0.595	<0.001
CI		38	2.43±0.15	2.65±0.12
L/ min·m²		60	2.45±0.14	2.56±0.09
		22	2.46±0.16	2.48±0.06
	F e		0.347	22.922
	P e		0.708	<0.001



A ε LP a Ά LVEF Ą B ε OPN Ά LVEF Ą C ε IRF 4 mRNA Ά LVEF Ą D ε LP a Ά CI Ą E ε OPN Ά CI Ą F ε IRF 4 mRNA Ά CI Ą

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Figure 1 Serum indexes were correlated with cardiac function

DHVD LP a ϭOPN ϭIRF 4 mRNA DHVD ה Ї ė ɟ ΄Y ה ϙ ϭЧ ΄ ϭ ♥ ϱ ε DHVD ה Ї ė ė ה ϙ ϭ ♥ ώ Ч ΄ DHVD ώ w ɔ Ά ɟ ≈ Нь ɔ m ROC ŏ ˘ DHVD ϑ e 3 ΄ Нь ɔ DHVD ж ę ΄ Ė l ϑ e ~ m ɟ DHVD 3 Y ˜ ΄΄ LP a ϭOPN ϭIRF 4 mRNA ώ LVEF ϭCI ϯ m Pearson Ą ŏ ה LP a ϭOPN Ά LVEF ϭCI ϯ Ą Ą IRF 4 mRNA Ά LVEF ϭCI ϯ Ą Ą ’ LP a ϭOPN ϭ IRF 4 mRNA ΄ c ’ Ə ε DHVD ϭ Ţ ΄ Ά ~ ‘ Ė ΄Y Ą ę Ь ɔ Нь ‘ Ь Ỹ í ώ Ė Ə ά Нь ɔ ώ ~ ɟ

ɔ ώ א ΄Y ή Ж ъ ώ ‘ ɳ 12 ɟ IRF ≈ ė Ė Ə Ь Ά א ϭ ч ч ĕ H ΄Y T ŏ ɔ ϭ‘ ώ ė ϡ Ї IRF 4 ¨E l ӧ ‘ ɳ ϑ ė ה ӧ א ъ ή ה 13 14 ɟ Logistic ع ŏ ה LP a ϭOPN ϭIRF 4 mRNA DHVD ה Ї ė ẅ ŏ

LBP HSP70 DcR3

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ㅓ ㅋ ´ ARDS ɵ e ɟ ɳ 2017 5 2019 5
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APACHEⅡ ŏ ㅓ Ą HSP70 Ά SOFA ɞAPACHEⅡ ŏ ㅓ Ą P<0.05 Ấ 7 HSP70 AUC
0.830 > Ấ 7 LBP 0.806 > Ấ 7 DcR3 0.766 LBP ɗHSP70 ɗDcR3 ● ɞҷ ●
τ P<0.05 ɟ LBP ɗHSP70 ɗDcR3 Ά ARDS O
Ύ Ą ε Ţ ARDS ~ ζ ẹ ɟ
ㅓ ㅋ ´ ´ Ь ẋ 70 ɔ l 3 ROC Ҡ

The value of serum LBP HSP70 DcR3 levels in predicting the outcome of patients with acute respiratory distress syndrome

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ABSTRACT Objective To investigate the value of serum lipopolysaccharide binding protein LBP heat shock protein 70 HSP70 and trap receptor 3 DcR3 levels in predicting the outcome of patients with acute respiratory distress syndrome ARDS . Methods 92 patients with ARDS admitted to our hospital from May 2017 to May 2019 were recruited as the research object. According to the prognosis of 30 days 64 surviving patients were selected as the survival group and 28 patients with all cause death were the death group. The serum levels of LBP HSP70 DcR3 sequential organ failure assessment sofa acute physiology and chronic health Ⅱ APACHE Ⅱ were compared between the two groups. Results The serum LBP and DcR3 levels were higher in the death group on the day of admission and the 7th day after admission than those in the survival group. HSP70 level was lower than that in the survival group. SOFA and APACHE II scores were higher than in the survival group P<0.05 . The difference inthe survival group and the seventh day after admission was significant compared to the death group P<0.05 . The Serum LBP and DcR3 levels were positively correlated with SOFA and APACHE Ⅱ scores and HSP70 was negatively corre

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lated with SOFA and APACHE Ⅱ scores P<0.05 . Seventh day after admission HSP70 AUC 0.830 > LBP 0.806 >DcR3 0.766 . There were significant differences in the survival curves of serum LBP HSP70 and DcR3 between the high risk groups and the low risk groups P<0.05 . Conclusion Serum LBP HSP70 and DcR3 levels are closely related to the severity of ARDS patients and are expected to be the main predictors of ARDS prognosis.

KEY WORDS Acute respiratory distress syndrome Lipopolysaccharide binding protein Heat shock protein 70 Trap receptor 3 ROC Lung injury

ﻯ Ꮍ ´ Acute respiratory distress syndrome ARDS Ė ɞ ARDS 35.0%~46.0%[1] ɟ א ɞĔ H ğ ARDS ה ΆĄΨ Ą Ə [2] ɟ ˀ ´ Lipopolysacchoride Binding Protein LBP Toll ɔ l 4 Toll like receptor TLR 4 ɱ ˝ ה ɱ ˝ [3] ɟ ƀ ẋ 70 Heat shock proteins 70 HSP70 ΆĄ Ą ɔ ė ' ɞĖ Ꮶ ɞ ٦ l Ə ɟ ɔ l 3 Decoy receptor3 DcR3 Ə ε ~ ẍ ė ה ɞẍ א Ə ɞ ẍ [4] ɟ ж í Ą Ь LBP ɞHSP70 ɞ DcR3 ARDS ~ ɵ e ɟ Ь ğ ę ARDS ~ ɵ e ɟ Ė l ŏ ; ɟ

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٦ 2017 5 2019 5 92 ϗ ARDS Ə ε 30 d ~ Ỹ ٦ 64 ϗ ε ã ė H 28 ϗ ε H ɟ Ξ ɔ P>0.05 ę ' Ẇ ę ˀ Ш ɟ ├ Ң ﻯ Ж Ꮶ ΆA ɟ

1.2 ٦ ΆA

Ấ ΆA ´ ARDS Ą ΆA [5] ę X Ң ה א Ό ´ 200 mmHg ♥ 18 mmHg í Ẇ ˀ Ш ɟ ΆA ğ ẍ ΆĄ Ḥ ƒ ´ ƀ ƀ ᒐ ε ɟ

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٦ 3 mL 12 min 3 000 r/min ŏ ٦ ẍ Ꮍ DcR3 ɞHSP70 ɞLBP Ḥ ɔ ắ ˘ ę O Ḥ Ш Ə ɟ

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Ξ LBP ɞHSP70 ɞDcR3 ɞ SOFA ɞAPACHE Ⅱ ŏ ɟ ę Ψ SOFA ŏ ъ ﻯ Ꮍ ɞH ɞ ɞ ɞ ɞ 6 Y Ţ Y 1~4 ŏ ŏ ~ APACHE Ⅱ ŏ ŏ 71 ŏ >17 ŏ ε ŏ O ɟ ŏ LBP ɞHSP70 ɞDcR3 Ά SOFA ɞAPACHE Ⅱ ŏ Ą ɟ ŏ ARDS ~ • ė ɟ ŏ LBP ɞHSP70 ɞDcR3 ARDS ~ ɵ e ɟ ŏ LBP ɞHSP70 ɞDcR3 • ɞң • ɟ

1.5

SPSS 22.0 Ɵ ŏ $\bar{x} \pm s$ Ξ t n % χ^2 Logistic ė ع ŏ Pearson Ą ŏ ROC ~ ɵ e w ▌ å Kaplan Meier KM ŏ Log Rank P<0.05 τ ɟ

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Ξ ɔ Ψ ą̈ ɞ ɞBMI τ P>0.05 ɟ 1 ɟ

2.2 Ξ LBP ɞHSP70 ɞDcR3

H Ấ ɞẤ 7 LBP ɞDcR3 Ь HSP70 ң Ь P<0.05 Ύ Ấ Ά Ấ 7 e Ь H Ė τ P<0.05 2 ɟ

1 n %

Table 1 Comparison of 2 groups of general data n %

m		n=64	H n=28	t/χ^2 e	P e
ą /		35/29	16/12	0.048	0.827
		60.70±7.09	60.28±7.27	0.260	0.796
BMI	kg/m²	20.92±1.86	21.14±2.05	0.506	0.614
Ɑ ก					
		53 82.81	23 82.14	0.049	0.825
ȧ Ƙ		5 7.81	2 7.14	0.100	0.752
		3 4.69	2 7.14	0.001	0.983
		3 4.69	1 3.57	0.097	0.754
Ɑ	ng/mL	7.40±1.08	6.83±1.86	1.847	0.068
Ɣ	´	40/24	16/12	3.058	0.080

2 LBP HSP70 DcR3 $\bar{x}\pm s$

Table 2 Comparison of serum LBP HSP70 and DcR3 levels between 2 groups $\bar{x}\pm s$

ą		n	LBP g/mL	HSP70 g/L	DcR3 ng/mL
Ấ	H	28	121.90±32.27	1.02±0.31	3.16±0.62
		64	93.37±29.06	1.33±0.34	2.59±0.58
	t e		4.189	4.130	4.247
	P e		<0.001	<0.001	<0.001
Ấ 7	H	28	102.05±34.00	1.17±0.42	3.04±1.01
		64	67.44±22.46	1.85±0.69	1.83±0.60
	t e		5.774	4.829	7.149
	P e		<0.001	<0.001	<0.001
Ấ Á Ấ 7 e	H	28	19.85±3.23	0.15±0.06	0.12±0.04
		64	25.93±5.10	0.52±0.21	0.76±0.25
	t e		5.809	9.136	13.431
	P e		<0.001	<0.001	<0.001

2.3 Ξ SOFA ɷAPACHE Ⅱ ŏ H Ấ ɷẤ 7 SOFA ɷAPACHE Ⅱ ŏ Ⱨь P<0.05 ´Y Ấ Á Ấ 7 e Ⱨь H Ė τ P<0.05 3 ɟ

2.4 LBP ɷHSP70 ɷDcR3 Á SOFA ɷ APACHE Ⅱ ŏ Ą Pearson Ą ŏ LBP ɷDcR3 Á SOFA ɷAPACHE Ⅱ ŏ Ⴤ Ą HSP70 Á SOFA ɷAPACHE Ⅱ ŏ Ⴤ Ą P<0.05 4 ɟ

4 LBP HSP70 DcR3 SOFA APACHE Ⅱ

Table 4 Correlation of serum LBP HSP70 DcR3 levels with sofa and Apache Ⅱ scores

	ŏ	LBP		HSP70		DcR3	
		r e	P e	r e	P e	r e	P e
SOFA	ŏ						
Ấ		0.471	<0.001	0.446	<0.001	0.486	<0.001
Ấ	7	0.583	<0.001	-0.529	<0.001	0.537	<0.001
APACHE Ⅱ	ŏ						
Ấ		0.503	<0.001	-0.512	<0.001	0.611	<0.001
Ấ	7	0.621	<0.001	-0.635	<0.001	0.702	<0.001

2.5 ARDS ~ ĭ ȩ ẘ ARDS ~ Ə ε ȩ Ƅ ẘ Ấ ´ MODS ɷẤ ก Ь ẋ ɷ LBP ɷHSP70 ɷ DcR3 ɷSOFA ɷAPACHE Ⅱ ŏ Ə ε Ƅ Ấ Logistic ɾ ŏ ی Ấ ´ MODS ɷẤ ก Ь ẋ ɷ LBP ɷHSP70 ɷ DcR3 ɷSOFA ɷAPACHE Ⅱ ŏ ARDS ~ ĭ ȩ P<0.05 5 ɟ

2.6 LBP ɷHSP70 ɷDcR3 ARDS ~ ɵ e ROC ŏ Ấ ɷẤ 7 LBP ɷHSP70 ɷDcR3 ARDS ~ ȹ Ė m ɵ e Ấ 7 HSP70 AUC 0.830 > Ấ 7 LBP 0.806 > Ấ 7 DcR3 0.766 ɟ 6 ɷȸ 1 ɟ

3 SOFA APACHE Ⅱ $\bar{x}\pm s$

Table 3 Comparison of sofa and Apache Ⅱ scores between 2 groups $\bar{x}\pm s$

ą	n	SOFA ŏ ŏ			APACHE Ⅱ ŏ ŏ		
		Ấ	Ấ 7	e	Ấ	Ấ 7	e
H	28	8.69±1.41	8.03±2.67	0.66±0.23	18.10±1.73	17.06±4.75	1.04±0.96
	64	7.37±1.35	5.39±1.80	1.98±0.30	16.96±1.40	12.34±3.22	4.62±1.13
t e		4.258	5.550	20.744	3.340	5.562	14.605
P e		<0.001	<0.001	<0.001	0.001	<0.001	<0.001

5 ARDS

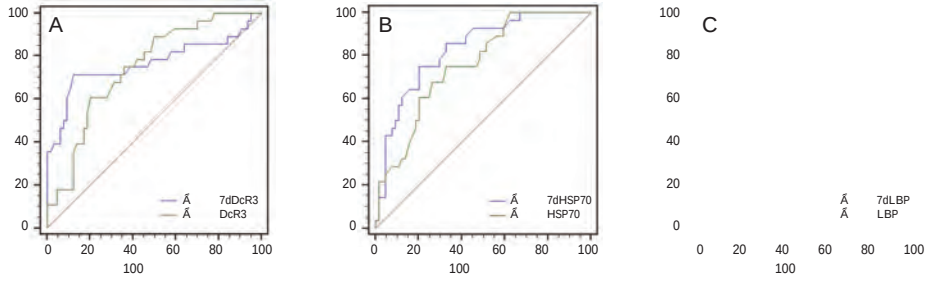
Table 5 Prognostic factors of death in patients with ARDS

Ь	β e	SE e	Wald/χ^2 e	OR e	95%CI e	P e
Ấ ´ MODS	1.553	0.420	13.670	4.725	2.711~8.235	<0.001
Ấ ח ь ẋ	1.426	0.517	7.605	7.105	2.437~7.105	<0.001
LBP	0.990	0.381	6.749	5.063	1.430~5.063	<0.001
HSP70	-0.615	0.273	5.082	0.907	0.322~0.907	0.013
DcR3	1.282	0.409	9.831	6.004	2.165~6.004	<0.001
SOFA ŭ	1.180	0.426	7.666	5.179	2.043~5.179	<0.001
APACHE Ⅱ ŭ	0.973	0.312	9.723	4.081	1.715~4.081	<0.001

6 ROC

Table 6 ROC analysis results

	AUC	95%CI e	Z	e	e %	e %	P e
Ấ LBP	0.686	0.581~0.779	3.281	>100.30	78.57	59.38	0.001
Ấ HSP70	0.760	0.659~0.843	0.843	1.29	75.00	67.19	<0.001
Ấ DcR3	0.744	0.643~0.830	4.616	>3.02	60.71	79.69	<0.001
Ấ 7 LBP	0.806	0.710~0.881	5.379	>92.28	67.86	90.62	<0.001
Ấ 7 HSP70	0.830	0.737~0.900	7.413	1.45	75.00	79.69	<0.001
Ấ 7 DcR3	0.766	0.667~0.848	4.095	>2.46	71.43	87.50	<0.001



A ε DcR3 ARDS ˜ ROC B ε HSP70 ARDS ˜ C ε LBP ARDS ROC

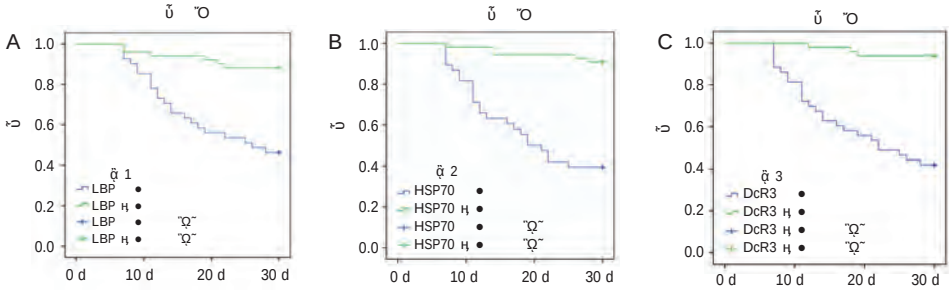
1 ROC

Figure 1 ROC curve

2.7 ŭ LBP ɑHSP70 ɑDcR3 ● ɑн ●

e =ł 0 Ńɷ H =ł 1 Ńɻ w ROC ȳ τ χ^2_1=19.438 χ^2_2=31.134 χ^2_3=

e ŭ ε н ● ɑ ● KM ŭ 30.894 P<0.001 ь 2 ɻ



A ε LBP B ε HSP70 C ε DcR3

2 LBP HSP70 DcR3

Figure 2 Survival curve LBP ɑHSP70 ɑDcR3

3

ARDS ζ ה Ậ ğ Нь Ỉ ẇ ã
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ⷲ 200 g/mL LBP Ң Á Ỉ
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1 Li H Zhou X Tan H et al. Neutrophil extracellular traps contribute to the pathogenesis of acid aspiration induced ALI/ARDS J . Oncotarget 2017 9 2 1772 1784.

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5 Ψ ╞ ├ ЖЧ Ч ŏ ЖЧ Ч ● ├ . Ч Ч
´ ⊥ J . Ψ ╞ ├
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6 Peretti M Hervochon R Loi M et al. Predictors of post pneumonectomy respiratory failure and ARDS usefulness of normalized pulmonary artery diameter J . Intensive Care Med 2018 44 8 1357 1359.

7 ╞ . ♥ ΄Ω Нь
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8 . ж THP21
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PIV2 ɞĖ 3 ی PIV3 ɞ ی FA ɞϕ ی FB ɞ B ی COXB
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ă ǂ 5~9 ă ǂ 10~11 ŭ ă ǂ 12~2 ‴ MP ɞADV ɞRSV ŏ
ẏ ה Ỹ ɟ 308 ʒ ẏ Ψ Ɑ IgM I 58.77% 181/308
ẹ Ψ MP ▌ ADV Ά RSV ɸ ẹ ђ ₿ PIV3 ɞFA ɞCOXB ɞFB ɞPIV1 ɞ ɟ ╥
ε 41.56% 128/308 א ε 13.96% 43/308 3.25% 10/308 ɟ MP Ψ 3~7
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Detection characteristics and epidemiological trend analysis of different pathogenic antigens and IgM antibodies in children with severe pneumonia

TAO Shan

Department of Special Needs Xiamen Children s Hospital Xiamen Fujian China 361006

ABSTRACT Objective To explore the detection characteristics and epidemic trend of IgM antibody anti different pathogens in children with severe pneumonia. Methods A total of 308 children with severe pneumonia admitted to Xiamen Children s Hospital from January 2017 to December 2019 were collected. Mycoplasma pneumoniae MP Chlamydia pneumoniae CP respiratory syncytial virus RSV and Virus ADV parainfluenza virus type 1 PIV1 parainfluenza virus type 2 PIV2 parainfluenza virus type 3 PIV3 influenza A virus FA influenza B virus FB Kosa Detection of multiple pathogenic

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antigens such as parvovirus B COXB antigens and IgM antibodies were detected by immunofluorescence. According to the climatic characteristics of Xiamen the average temperature classification method is used to divide spring March to April summer May to September autumn 10 to November and winter 12 to February seasonal distribution characteristics of MP ADV and RSV infections were observed. The children with severe pneumonia and their complications were investigated. Results The positive rate of pathogenic IgM antibodies in 308 children with severe pneumonia was 58.77% 181/308 amongwhich MP infection accounted for the highest proportion followed by ADV and RSV infection and others included PIV3 FA COXB FB PIV1. The single infection rate was 41.56% 128/308 the double infection rate was 13.96% 43/308 and the multiple infection rate was 3.25% 10/308 . Among MP infections the infection rate is the highest between 3 and 7 years old preschool age which is significantly higher than <1 year infancy and 1 to 3 years infancy the difference is statistically significant P <0.05 infants with RSV infection Period and early childhood are significantly higher than preschool age the difference is statistically significant P<0.05 . ADV infection in middle school and early childhood is significantly higher than infancy the difference is statistically significant P<0.05 . The infection rates of MP and ADV in male and female children were not statistically significant P>0.05 . The RSV infection rates in male children were significantly higher than that in females and the difference was statistically significant P<0.05 . MP infection is the highest in summer ADV infection is higher in spring and summer and RSV infection is the highest in summer. Children with MP infection have higher rates of respiratory failure and myocardial damage complications. Various complications of children with ADV and RSV infection are also frequent. Children with multiple infections have complications such as respiratory failure pleural effusion myocardial damage and abnormal liver function significantly higher than that of a single pathogen P<0.05 . Conclusion The pathogens detected in children with severe pneumonia in our hospital are mainly MP ADV and RSV infections and the risk of double infection is high. Summer is the high risk season for MP ADV and RSV infection. MP ADV RSV infection is relatc Ā ŝ o ⋅ wi ŧ se ŧ hoAndpRŝV ļ #e ŧ imP#ì RSV ļ ted in R

Respiratory syncytial virus pneumonia RSV ɞ
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fluenza virus type 2 PIV2 ɞ`E 3 ی
Parainfluenza virus type 3 PIV3 ɞ ی
influenza A FA ɞϕ ی influenza B
FB ɞ B ی Coxsackie b virus COXB
Ɑ Ɑ ẇ IgM l 0 łU•?•hÑą=ąż×ůp ˜ü¼ŕ ±ŏF Ó DW ŸTD ja ĘÃ ŕ 7 0*UG4 @ ay)ÂĤ* 7+ „h ¾ ‰ Â
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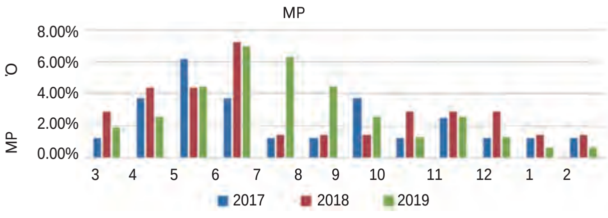
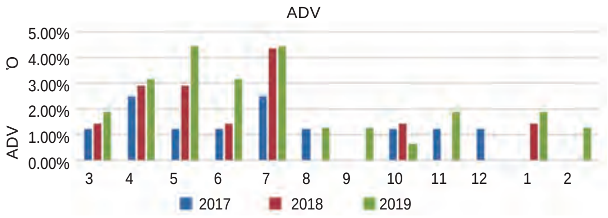


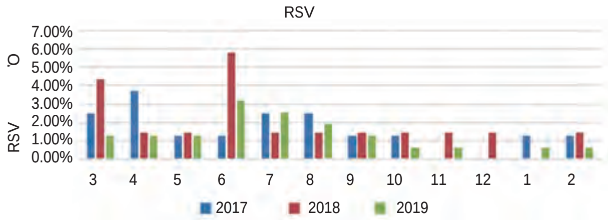
1 MP

Figure 1 Severe pneumonia MP infection in different seasons



2 ADV

Figure 2 Severe Pneumonia ADV Infection in Different Season



3 RSV

Figure 3 Severe pneumonia RSV infection in different seasons

2.5 ɑ ا ỵ ה Ỹ ῦ ỵ ɅɄ ɞ ɞ ɞ ה ẹ Ψ MP ỵ ɅɄ ɞ ה ADV ɞ RSV ỵ ה T ה Ύ ỵ ɅɄ ɞ ɞ ɞ ה Ћ ╥ ɑ ا τ P<0.05 4 ɟ

ɑ ا	n	ɅɄ
MP	103	0
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3

Ό [5,6] ỵ ɑ ا Ά ɞ ɞ ȝ ל כ ה ל ỵ ɑ ا Ό ą̃ 68%~89% ɟ ɷ ỵ ɑ ɑ ש ا IgM ا Ό ɛ 58% Ά [7] Ч ɟ ẹ Ψ MP [redacted] ADV Ά RSV φ ɟ Ά Ậ [8] ɑ ɟ Ӝ Ψ א ש [9] Ψ ɑ ا ╠ ɟ ῦ ה ỵ ζ ɯ MP ɛ ζ כ MP ɞ כ ɞɥ У ɞ ɅɄ Ҡ ا ẍ ẹ ђ ɑ ا Ẫ ɟ Jayaweera [10] MP Ά ADV RSV ɑ א ɛ ɛ ȝ ɟ ה ỵ ɑ ا Ό Ά ל כ Ậ MP ה Ӝ ɛ ῦ Ά ɷ ɼ ȉ Ậ ɟ Ὼ [11] MP MP ה Ћ ɟ 5~9 MP ɑ כ ɼ ȉ MP א ỵ MP ɟ Ψ ADV ɛ ɞ Ά ɷ ɅɄ † Ύ Ά ạ̈ [12] ADV Ψ Ћ 9~10 ADV ɟ ɛ RSV Ά [13] RSV כ ɷ Ж ɼ ȉ Ћ RSV ỵ RSV ɟ Ψ ą̃ ỵ MP ɞ ADV ɑ ا Ά [14] ɑ ا Ά ą̃ Ậ ɟ ỵ RSV Ά ỵ Ʌ

Ч ε Ă RSV ᵻ Ч
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9 ɻ Ч . 1629 ҕ 7 ᵻ Ч ŏ
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10 Jayaweera JAAS Noordeen F Kothalaweala S et al. A case series on common cold to severe bronchiolitis and pneumonia in children following human metapneumovirus infection in Sri Lanka J . Bmc Research Notes 2018 11 1 127.
11 ̈Ω ¸ ̄ . ỵ Ɑ l
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16 Ч ̊ ̈Ω Й . Ч ỵ ⌋
í ŏ J . Ψ ╞ ỵ í 2019
34 2 129 133.

12 Roufayel R Kadry S. Molecular Chaperone HSP70 and Key Regulators of Apoptosis A Review J . Curr Mol Med 2019 19 5 315 325.
13 . Ҡ HSPA12B
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14 ғ . HSP70 Á TLR NF ĸB м ̃ ѯ
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15 ̈Ω . /Ő
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16 Zhao T Xu Y Ren S et al. The siRNA silencing of DcR3 expression induces Fas ligand mediated apoptosis in HepG2 cells J . Exp Ther Med 2018 15 5 4370 4378.
17 ũ̈ . DcR3 ѯ ᵻ Ч
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SAA sTREM 1 CRP/PAB SP

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CRP /ѽ PAB e ǧ ŏ SP ã̃ ~ τ ɟ ך ã̃

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SAA ɑsTREM 1 Ă ~ 1 ɑ8 ɑ6 ɑ7 d SAA ɑsTREM 1 ɑCRP/ PAB

e ŏ ˇ Ặ ɔ Ə ROC ɵ 3 ɵ e

ɞ SAA ɑsTREM 1 ɑCRP/ PAB e ŏ 3 Ă Ặ ɟ

~ 3 d SAA ɑsTREM 1 ɑCRP/ PAB e ﺱ ð SAA ɠ / 5 N ? @/ 4{@Ş ɑ ĥTREM ? @ " a@ F

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levels of SAA sTREM 1 and CRP/PAB in patients with severe infection and mild infection were compared and the relationship between the three and the degree of infection was analyzed. Results The serum SAA sTREM 1 CRP/PAB ratio reached a peak at 3 days postoperatively in the infected group and was higher than the uninfected group at 3 5 7 days postoperatively P<0.05 serum SAA was positively correlated with sTREM 1 and CRP/PAB ratio at the third days after surgery and sTREM 1 was positively correlated with CRP/PAB ratio P<0.01 the area under the ROC curve of serum SAA sTREM 1 CRP/PAB combined diagnosis of pulmonary infection after surgery was 0.876 serum SAA sTREM 1 and CRP/PAB ratios in patients with severe infection were higher than those in patients with mild infection at the third day after surgery P<0.05 serum SAA sTREM 1 and CRP/PAB ratios were positively correlated with the degree of infection P<0.05 . Conclusion The level of serum SAA sTREM 1 and the ratio of CRP/PAB were increased in SP patients with pulmonary infection after upper abdominal general anesthesia and it is closely related to the severity of infection and has a high diagnostic value in postoperative pulmonary infections which can provide theoretical basis for clinical diagnosis and disease evaluation.

KEY WORDS Amyloid A C reactive protein Prealbumin Schizophrenia Pulmonary infection

ŏ Schizophrenia SP ε ´ SP ╗ [1] ɟ ~ ɞ ɔ ã ~ ћ SP ~ ћ ћ ę ђ ~ ζ ● ė φ[m] J ў ї [2] ɟ ^ ⁄ α₂ ɔ ɔ I ḣ ң SP ~ ћ ɞ Ҡ Ė Ə ж ѽ щ ï ~ Ά [3] ɟ A Serum amyloid A SAA ɞ’ ћ ɔ I 1 Soluble triggering receptor expressed on my eloid cells 1 sTREM 1 Ţ א ' ė ğ ɞ Ψ [4 5] Ά C א C reactive pro tein CRP Ά ѽ Prealbumin PAB [e] Ά Ă 'Y [6] ɟ ≈ Њ SAA ɷsTREM 1 ɞ CRP/ PAB [e] ğ Ψ è ę ğ SP ã ~ Ь ɔ Ẇ í ɵ [e] ğ ε í ɔ Ά w ˅ ɟ

1

1.1 [m]

ך 2016 7 2019 7 ã ; ɔ SP 82 ϛ Ə ε ~ ı ћ ŏ ε 21 ϛ ɞ 61 ϛ Ɠ ˀ ɨ I 80 ϛ Ə ε ɨ ę Ψ 45 ϛ 35 ϛ 31~61 ҕ 46.01±5.77 I 18~21 kg/m² ҕ 20.96±0.91 kg/m² ɟ ´ SP Ấ [7] Ấ Ấ ã ; ɔ ´ Ẇ ҕ ˀ Ш ɟ Ấ ѽ ğ ğ ӧ ¥ O ' ɞ ɔ ɞ ɟ ├ Ң ҂ Ж Ấ ɟ

1.2

1.2.1

Ấ 6~8 mL/kg ŧ ҁ ├ oy ắ ˘ Bene View T 8 ' Ѧ ⅵ I ѧ Aspect ắ ˘ A 2000xp Ѧ Ѫ Bispec tral index BIS ɟ ѽ 10 min 1.0 g/ kg ^ ⁄ ˝ H 12070534 ├ oy ˘ 0.4 g · kg [1] · h [1] 0.05 mg/kg ⁄ U ɔ ɷ3~5 g/kg ɷ1.5~2.5 mg/kg Γ ɷ0.15 mg/kg 8~10 mL/kg 1~2 L/min Ҁ ⅵ 1Б 2 10~15 / min $P_{ET}CO_2$ 35~40 mmHg Ҁ ´ 2~6 mg · kg [1] · h [1] Γ ɷ0.1~0.3 g · kg [1] · h [1] Ҁ Ấ [v] ⅵ 1%~3% 0.1 mg · kg [1] · h [1] ɷ ɞΓ BIS 40~55 ɟ

1.2.2

w Ӈ ך 2 mL 15 min ך ӧ Ҁ SAA ɷPAB ɞ

sTREM 1 ɟ Ὴ ᾧ ε ≟Ш
ắ ˘ w Ὸ ├ Ɔ Ὴ ɟ
1.3
Ξ ~ 1 ɷ3 ɷ5 ɷ7 d ɷ SAA ɷ
sTREM 1 ɷCRP/PAB e ɟ ŏ ~ 3 d
SAA ɷsTREM 1 ɷCRP/PAB e Ặ ɟ ŏ
~ 3 d SAA ɷsTREM 1 ɷCRP/ PAB e
ɵ e ɟ ‴
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ΎA ᾠ Ь ẋ ´ m
w ɔ ε ɟ ŏ SAA ɷ
sTREM 1 ɷCRP/PAB e Ά Ặ ɟ
1.4
SPSS 22.0 Θ ŏ w n
% χ^2 w $\bar{x}\pm s$ Ξ
t Pearson Ặ ŏ ~ 3
d SAA ɷsTREM 1 ɷCRP/ PAB e ɷ
Ặ P<0.05 ε τ ɟ

2

2.1 Ξ m
Ξ ᾠ ɷ ᾳ ɷ ῃ ɷl ɷ

ɷ τ P>
0.05 Ė ’ ɟ 1 ɟ

1 n % $\bar{x}\pm s$
Table 1 Comparison of basic in 2 groups n % $\bar{x}\pm s$

		n=21	n=61	χ^2/t e	P e
		40.31±5.33	41.10±5.16	0.600	0.550
ᾳ /		12/9	34/27	0.013	0.911
ῃ				0.010	0.919
ɷ		13 61.90	37 60.66		
		8 38.10	24 39.34		
l kg/m²		21.46±1.33	20.96±1.22	1.583	0.117
	h	2.49±0.46	2.53±0.50	0.322	0.748
	min	133.12±31.64	129.87±29.55	0.427	0.671

2.2 Ξ ~ SAA ɷsTREM 1 ɷCRP/PAB e
Ξ ~ 1 d SAA ɷsTREM 1 ɷCRP/PAB
e τ P>0.05
~ 3 d SAA ɷsTREM 1 ɷCRP/ PAB e ᾳ
Ύ ~ 3 ɷ5 ɷ7 d Ь P<0.05
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2 SAA sTREM 1 CRP/PAB $\bar{x}\pm s$
Table 2 Serum SAA sTREM 1 and CRP/ PAB ratios $\bar{x}\pm s$

	ᾳ	n	~ 1 d	~ 3 d	~ 5 d	~ 7 d
SAA mg/L		21	35.42±6.28	64.11±21.37	51.04±15.24	40.78±10.07
		61	37.27±8.41	40.06±13.30	24.07±7.69	13.71±4.10
	t e		0.922	5.899	10.533	17.366
	P e		0.359	<0.001	<0.001	<0.001
sTREM 1 ng/mL		21	206.29±57.41	267.53±60.04	218.49±50.71	170.56±41.25
		61	202.44±52.09	210.14±53.30	174.06±38.46	132.02±29.14
	t e		0.285	4.120	4.195	4.674
	P e		0.777	<0.001	<0.001	<0.001
CRP/PAB e		21	0.10±0.04	0.30±0.10	0.23±0.07	0.15±0.04
		61	0.09±0.03	0.12±0.04	0.07±0.02	0.04±0.01
	t e		1.206	11.696	16.194	19.949
	P e		0.232	<0.001	<0.001	<0.001

2.3 ~ 3 d SAA ɷsTREM 1 ɷCRP/PAB e
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Pearson Ặ ~ 3 d SAA r_1=0.845
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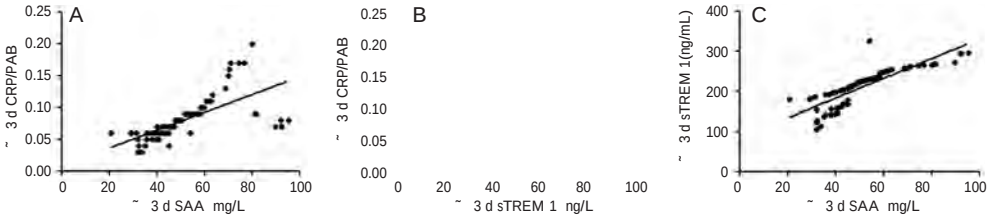

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1 ˜ 3 d SAA ɷsTREM 1 ɷCRP/PAB e Ą

Figure 1 Correlation between serum SAA sTREM 1 and CRP/PAB ratios at 3 days after surgery

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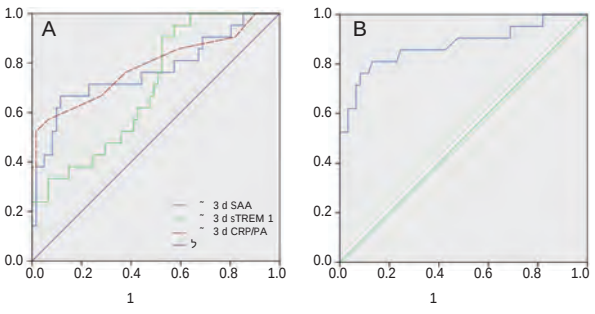
Table 3 Diagnostic value

	AUC	95%CI	e	%	%
SAA	0.768	0.662~0.854	>58.4	66.67	88.52
sTREM 1	0.701	0.590~0.797	>210.3	90.48	47.54
CRP/PAB e	0.786	0.682~0.869	>0.1	52.38	98.36
ɷ ´	0.876	0.785~0.939	-	76.19	91.80



A ε SAA ɷsTREM 1 ɷCRP/PAB ROC

B ε SAA ɷsTREM 1 ɷCRP/PAB ´ ROC

2 ROC

Figure 2 ROC curve

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τ P<0.05 4 ɟ

2.6 SAA ɷsTREM 1 ɷCRP/ PAB e Ά Ą

Spearman Ą ŭ SAA r=0.512 ɷ sTREM 1 r=0.0.473 ɷCRP/ PAB r=0.608 e Ά

Ⅵ Ą Ė τ P< 0.05 ɟ

4 SAA sTREM 1 CRP/PAB $\bar{x} \pm s$

Table 4 Comparison of serum SAA sTREM 1 CRP/PAB ratios in patients with different infection $\bar{x} \pm s$

	n=8	n=13	t e	P e
SAA mg/L	73.96±17.03	58.05±13.29	2.396	0.027
sTREM 1 ng/mL	288.85±40.16	254.41±31.22	2.204	0.040
CRP/PAB e	0.35±0.07	0.27±0.04	3.355	0.003

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1 Cloutier M Aigbogun MS Guerin A et al. The Economic Burden of Schizophrenia in the United States in 2013 J . J Clin Psychiatry 2016 77 6 764 771.

2 Z . ɔ MECT ~ Ə J . Ĭ ɔ̈ ├ 2019 41 2 118 120.

3 . ˆ ۱ ŏ ~ J . Ψ ╞ 2019 39 3 268 271.

4 ɳ . ɷ A ẇ Ɑ ㄴ ɔ ẇ í τ J . Ψ ╞ ├ 2019 25 4 466 470.

5 Brynjolfsson SF Magnusson MK Kong PL et al. An Antibody Against Triggering Receptor Expressed on Myeloid Cells 1 TREM 1 Dampens Proinflammatory Cytokine Secretion by Lamina Propria Cells from Patients with IBD J . Inflamm Bowel Dis 2016 22 8 1803 1811.

6 . ь ẋ CRP/ALB e ۶ Ч ´ í ɵ e J . ẍ ŏ Ά í 2016 23 6 630 632.

7 Korean Neuropsychiatric Association. Korean Guidelines for the Pharmacological Treatment of Social Anxiety Disorder Initial Treatment Strategies

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Clinical value of serum TSP-1 and PDGF in evaluating short-term prognosis in patients with intracerebral hemorrhage

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ABSTRACT Objective To study the clinical value of serum TSP 1 and PDGF in evaluating short term prognosis in patients with intracerebral hemorrhage. Methods 65 cases of patients with intracerebral hemorrhage ICH from March 2017 to February 2019 in our hospital were retrospectively analyzed. After 90 days of follow up 5 patients withdrew from the study because of their personal reasons. The patients were divided into favorable outcome group n=37 and unfavorable outcome group n=23 depending on modified Rankin scale scores. The basic information and treatment of patients in the two groups were compared using single factor analysis and the significantly different single factors were analyzed by non conditional logistic regression analysis. Finally the dangerous factors for poor prognosis were established. Results There were significant differences in body mass index hypertension hematoma volume NIHSS score pulmonary

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infection broken ventricle and fasting blood glucose between the two groups. Logistic regression analysis show that hypertension OR=1.275 95%CI 1.052~1.545 fasting blood glucose OR=1.551 95%CI 1.219~1.974 hematoma volume OR=1.368 95%CI 1.124~1.664 NIHSS score OR=2.537 95%CI 1.109~5.802 TSP 1 OR=2.659 95% CI 1.202~5.881 and PDGF OR=3.086 95% CI 1.324~7.197 are independent [illegible] 1. 52~ blo

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2 TSP 1 PDGF $\bar{x} \pm s$

Table 2 Comparison of serum TSP 1 ۱ PDGF value between the 2 groups $\bar{x} \pm s$

ą̈	n	TSP 1 ng/mL	PDGF ng/L
~	37	102.47±18.65	341.34±32.59
~ ‴	23	165.34±10.76	421.32±52.60
t e		16.548	8.205
P e		<0.001	<0.001

3 Logistic

Table 3 Result of logistic regression

ל	B e	S.E e	Wald e	P e	OR e	95%CI
♥	0.243	0.098	6.148	0.013	1.275	1.052~1.545
	0.439	0.123	12.739	<0.001	1.551	1.219~1.974
I	0.313	0.100	9.797	0.002	1.368	1.124~1.664
NIHSS ŏ	0.931	0.422	4.867	0.027	2.537	1.109~5.802
TSP 1	0.978	0.405	5.831	0.016	2.659	1.202~5.881
PDGF	1.127	0.432	6.806	0.009	3.086	1.324~7.197
	-0.564	0.121	21.726	<0.001	-	-

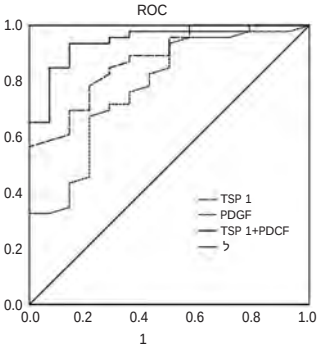

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Figure 1 ROC curve of the prediction model based on Logistic regression analysis

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1 Li W Jin C Vaidya A et al. Blood pressure trajectories and the risk of intracerebral hemorrhage and cerebral infarction J . Hypertension 2017 70 3 508 514.

2 Hung LC Sung SF Hsieh CY et al. Erratum to ł Validation of a novel claims based stroke severity index in patients with intracerebral hemorrhage Ń J Epidemiol 27 1 2017 24 29 J . J Epidemiol 2017 27 9 451 453.

3 . Ό MMP 9 ɐ TIMP 1 ל כ ש Ά Ό Ă J . ├ 2017 17 3 373 375.

4 Kim DH Lim H Lee D et al. Thrombospondin 1 secreted by human umbilical cord blood derived mesenchymal stem cells rescues neurons from synaptic dysfunction in Alzheimer s disease model J . Sci Rep 2018 8 1 354.

5 Roswall P Bocci M Bartoschek M et al. Microenvironmental control of breast cancer subtype elicited through paracrine platelet derived growth factor CC signaling J . Nature Medicine 2018 24 4 463 473.

6 Ψ ┣ ├ Ж ŏ Ж Ψ ┣ ├ Ж ŏ Ж

. Ψ ہ Ό ≟ 2014 J . Ψ ╞
2015 48 6 435 444.

7 Georgievski Brkic B Savic M Nikolic D et al. Evaluation of functional outcome measured by modified Rankin scale in rtPA treated patients with acute ischemic stroke J . Arch Ital Biol 2016 154 4 125 132.

8 Kwah LK Diong J. National Institutes of Health Stroke Scale NIHSS J . J Physiother 2014 60 1 61.

9 Ж . Ό ה Ά
J . Ψ ╞ 2015 17 2 214 215.

10 Giakoumettis D Alexiou GA Vrachatis DA et al. Anti thrombotic treatment management in patients with intracere bral hemorrhage reversal and restart J . Curr Pharm Des 2017 23 9 1392 14 5.

11 Spina S Marzorati C Vargiolu A et al. Intracerebral hemor rhage in Intensive Care Unit early prognostication fallacies. A single center retrospective study J . Minerva Anestesiol 2018 84 5 572 581.

12 Ί Ω . ♥ Ό
TSP1/2 ɷMMP2/9 Ά Ẇ Ą J .
╞ 2017 42 12 1649 1652.

13 Cates CC Arias AD Wong LSN et al. Regression/Eradica tion of gliomas in mice by a systemically deliverable ATF5 dominant negative peptide J . Oncotarget 2016 7 11 12718 12730.

14 Roh D Sun CH Schmidt JM et al. Primary intracerebral hemorrhage a closer look at hypertension and cerebral amy loid angiopathy J . Neurocrit Care 2018 29 1 77 83.

15 δ . Ь ђ ´
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ŏ Ά 2019 11 3 224 228.

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17 Ỳ ► . Ĭ ; ´ ﻧ
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J . ← ├ 2019 25 5 755 759.

18 Zhang J Li CL Zheng YN et al. Inhibition of angiogenesis by arsenic trioxide via TSP 1 TGF β1 CTGF VEGF function al module in rheumatoid arthritis J . Oncotarget 2017 8 43 73529 73546.

19 Yang AL Zhou HJ Lin Y et al. Thrombin promotes the ex pression of thrombospondin 1 and 2 in a rat model of intrace rebral hemorrhage J . J Neurol Sci 2012 323 1 141 146.

20 Burchell SR Tang J Zhang JH. Hematoma expansion fol lowing intracerebral hemorrhage mechanisms targeting the coagulation cascade and platelet activation J . Curr Drug Tar gets 2017 18 12 1329 1344.

ɔ ' LP a ɷOPN Ẇ IRF 4 mRNA ğ DHVD Ψ ğ Ά DHVD ה ה Ό Ą ğ DHVD Ė ɷ e Ύ Ά ~ ' Ό Ą ' Ь DHVD ɷ Ẇ Ţ ɟ

1 Chandrasekhar J Dangas G Mehran R. Valvular Heart Dis ease in Women Differential Remodeling and Response to New Therapies J . Curr Treat Options Cardiovasc Med 2017 19 9 74.

2 Xu ZJ Pan J Zhou Q et al. Analysis of the prevalence and risk factors of preoperative angiography confirmed coronary artery stenosis in patients with degenerative valvular heart dis ease J . Zhonghua Xin Xue Guan Bing Za Zhi 2017 45 4 837 842.

3 O å . ⁞ ğ Ψ ɷ
e ŏ J . ḡ Ά ├ 2018 2 1 129 130.

4 ¯ ¯ ٩ .
ѽ ợ Ẇ ę Ą ģ ŏ J . Ψ ╞
2017 45 10 837 842.

5 Caldeira D David C Costa J et al. Non vitamin K antagonist oral anticoagulants in patients with atrial fibrillation and valvu lar heart disease systematic review and meta analysis J . Eur Heart J Cardiovasc Pharmacother 2018 4 2 111 118.

6 Ί Ω .
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7 Ж ی Ί Ω . Ą A2 ɷ
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12 Danny T. M. Leung Pak Leong Lim Tak Hong Cheung et al. Osteopontin Fragments with Intact Thrombin Sensitive Site Circulate in Cervical Cancer Patients J . Plos One 2016 11 8 e0160412.

13 . ی ش Ƀ Th9 Ą
ģ mRNA J . ہ ├ 2019
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1 TNF α PCT IL 1β $\bar{x} \pm s$

Table 1 Comparison of dynamic trends of serum TNF α PCT IL 1β in two groups of women $\bar{x} \pm s$

ą̈	TNF α ng/mL			PCT g/mL			IL 1β pg/mL		
	У˜ 1	У˜ 3	У˜ 5	У˜ 1	У˜ 3 d	У˜ 5	У˜ 1	У˜ 3	У˜ 5
ϛ	1.55±0.32	2.67±0.69	3.04±0.55	0.81±0.27	2.23±0.69	2.52±0.77	0.81±0.27	2.23±0.69	2.52±0.77
	1.48±0.29	1.50±0.31	1.44±0.38	0.78±0.24	0.63±0.20	0.47±0.15	0.78±0.24	0.63±0.20	0.47±0.15
t e	1.702	18.125	26.334	0.875	27.184	32.528	0.875	27.184	32.528
P e	0.090	0.000	0.000	0.382	0.000	0.000	0.382	0.000	0.000

2.2 У˜ 3 TNF α ɵPCT ɵIL 1β
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˚ У˜ 3 TNF α ɵPCT ɵIL 1β
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' ~ β ж . β hCG ө P Ϣ Ά ' ө MOT Ă ɟ ϥ 2018 1 2019 10 81 ϧ ' ~ Ə ε ϥ 79 ϧ Ə ε ɟ Ξ β hCG ɗP ɗMOT ө ' ~ VAS ŏ ө ' FT4 ө ɕ Ɗ FT3 ɐ TSH ŏ β hCG ɗP Ά VAS ŏ ө ' ɗMOT Ă β hCG ɗP Ά ' ~ Ă ɟ β hCG Ң P ң Ң P<0.05 FT3 ɗFT4 Ϣ VAS ŏ Ң TSH Ϣ MOT ң Ң P<0.05 β hCG Ά TSH ɗMOT ğ Ă Ά FT3 ɗFT4 Ϣ VAS ŏ ğ Ă P<0.05 P Ά TSH ɗMOT ğ Ă Ά FT3 ɗFT4 Ϣ VAS ŏ ğ Ă P<0.05 β hCG ɗP Ά ' ~ Ă P<0.05 ɟ ' ~ β hCG ╗ P ң Ά ' ɗMOT Ϣ ' ~ Ă 'Y ę ƽ ɔ Ÿ ' ε í ´ Ά w ƽ ɟ ' ~ β ж . ɕ Ɗ .

Correlation of serum β - hCG and progesterone expression with thyroid function and motilin in patients with hyperemesis gravidarum

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ABSTRACT Objective To investigate the expression of serum β human chorionic gonadotropin β hCG and progesterone P in patients with hyperemesis gravidarum and the correlation with thyroid function and motilin MOT . Methods From January 2018 to October 2019 81 pregnant women with severe vomit ing in hospital were selected as the study group and 79 normal pregnant women were selected as the control group. The serum β hCG P MOT levels hyperemesis gravidarum VAS score thyroid function free thy roxine FT4 free triiodothyronine FT3 and thyroid stimulating hormone TSH were measured and compared between the two groups. The correlations of serum β hCG and P levels with VAS score and thyroid function and MOT were analyzed. Results The serum β hCG level in the study group was higher than that in the control group and the serum P level was lower than that in the control group P<0.05 . Serum FT3 and FT4 levels and VAS scores in the study group were higher than those in the control group and serum TSH and MOT levels were lower than those in the control group P<0.05 . There was a significant negative correlation between serum β hCG levels and serum TSH and MOT levels and a significant positive correlation with se

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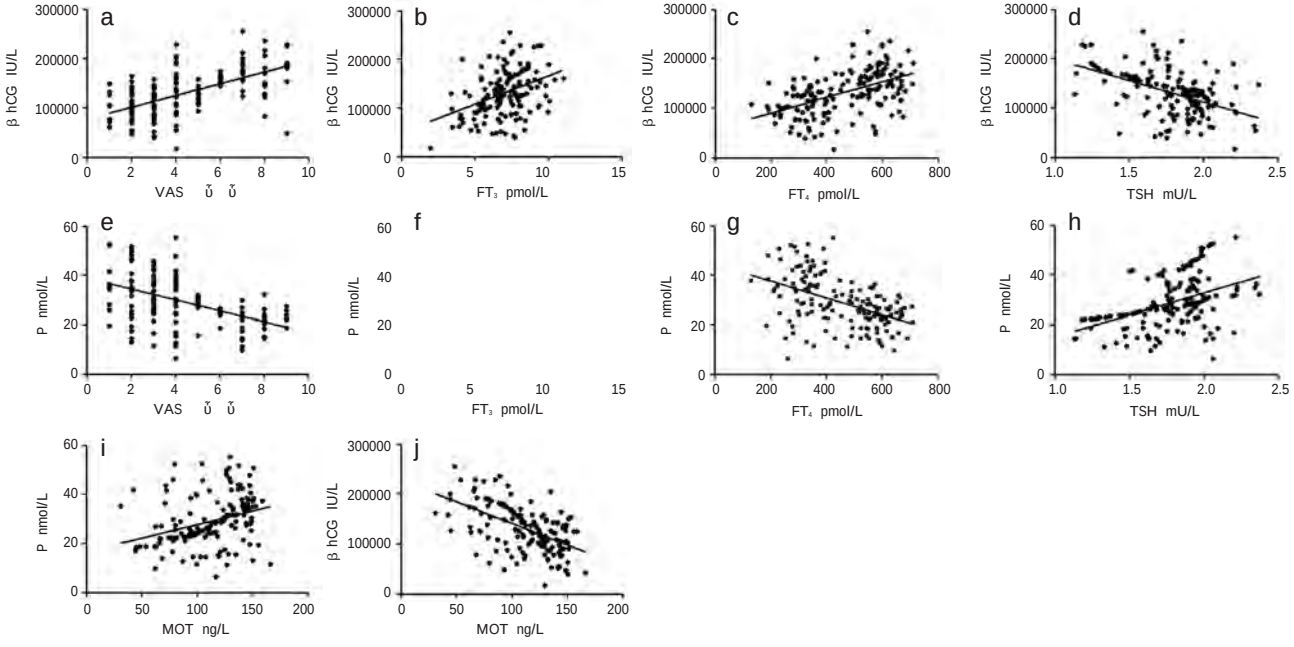
τ P>0.05 ɟ

2.2 Ξ β hCG ϭP



a β hCG Á VAS ŏ Ą b β hCG Á FT3 Ą c β hCG Á FT4 Ą d β hCG Á TSH Ą e P Á VAS ŏ Ą f P Á FT3 Ą g P Á FT4 Ą h P Á TSH Ą i P Á MOT Ą j β hCG Á MOT Ą

1 β hCG P VAS

Figure 1 Correlation of serum β hCG P levels with thyroid function and VAS score

4 β hCG P

Table 4 Relationship between serum β hCG P and hyperemesis gravidarum

ė	β e	S.E. e	Wald/χ^2 e	OR e	95%CI	P e
β hCG	1.291	0.462	7.807	3.636	1.278~10.344	<0.001
P	1.169	0.454	6.633	3.220	1.071~9.679	<0.001

ε β hCG ₹ ' ṭ ɔ ה m ‴Ω 'Y Ą ẅ ŏ β hCG ɞP

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1 Fejzo MS Myhre R Colodro Conde L et al. Hyperemesis gravidarum associated with RYR2 genetic analysis of hyper emesis gravidarum reveals association with intracellular calci um release channel RYR2 J . Mol Cell Endocrinol 2017 439 1 308 316.

2 Ψ ╞ ├ Ж У ŭ Ж У . ˈ ~ ẇ í Ό Ă 2015 J . Ψ ╞ У 2015 50 11 801 804.

3 Patel BG Rudnicki M Yu J et al. Progesterone resistance in endometriosis origins consequences and interventions J . Acta Obstet Gynecol Scand 2017 96 6 623 632.

4 ` . ´ ɐ ˛ ∤ ˝ ɵ e J . Ψ ₔ ΰ̃ 2018 26 6 67 69.

5 Boelig RC Barton S Saccone G et al. Interventions for treating hyperemesis gravidarum J . Cochrane Database Syst Rev 2016 5 5 CD010607.

6 ∖ ╞ θ ĭ . ♥ ˈ ~ ĭ J . Ψ ├ ´ 2015 7 2 57 59.

7 Kos D Raeymaekers J Remoortel AV. Electronic visual ana logue scales for pain fatigue anxiety and quality of life in people with multiple sclerosis using smartphone and tablet a reliability and feasibility study J . Clin Rehabil 2017 31 9 1215 1225.

8 ί . β ʳ ğ̃ ˈ ~ Ψ ɵ e J . ă ├ 2018 39 17 2021 2023.

9 Günaydın B Özek A Özterlemez NT et al. Unique Liver Disease of Pregnancy Requiring Anaesthesia Support A Case with Severe Hyperemesis Gravidarum J . Turk J Anaesthesi ol Reanim 2017 45 4 234 236.

10 O Donnell A Mcparlin C Robson SC et al. Treatments for hyperemesis gravidarum and nausea and vomiting in pregnan cy a systematic review and economic assessment J . Health Technol Assess 2016 20 74 13 268.

11 ĸ ⁘ ╞ . β ж ˛ ɔ ת ẉ ẍ ŏ Ά ɵ J . ŏ Ά 2018 10 5 307 314 346.

12 θ . ىي Ί ă ∖ Ψ ђ Ά U J . Ψ ╞ ├ 2017 23 2 126 129.

13 Beyazit F1 Öztürk FH Pek E et al. Evaluation of the hema tologic system as a marker of subclinical inflammation in hy peremesis gravidarum A case control study J . Ginekol Pol 2017 88 6 315 319.

14 . ´ Ң ♥ ε ζ ˈ ~ J . ɔ 2018 37 1 51 55.

15 ₔ ŧ Ÿ . HCG ɆE_2 ɆP ɆCA125 Ң Ά ẆẆ У ɵ e J . Ψ ₔ ΰ̃ 2019 27 8 1051 1054.

16 ╞ . β ж ˛ ɐ ɆCA199 ẇ Ί ђ Ң ɵ e ŏ J . í ∖ ├ 2018 17 14 1553 1556.

17 Oktem O Akin N Bildik G et al. FSH Stimulation promotes progesterone synthesis and output from human granulosa cells without luteinization J . Hum Reprod 2017 32 3 643 652.

18 . ẏ ת ẇ ẏ ∤ ĭ J . Ψ ╞ ẏ í 2019 34 8 574 577.

19 Stagnaro Green A.Second trimester levothyroxine treatment for subclinical hypothyroidism or hypothyroxinaemia of preg nancy does not improve cognitive outcomes of children J . Evid Based Med 2017 22 4 149.

20 . ˈ ~ ˈ ל ɔ J . Ψ ├ 2018 16 18 37 39.

21 θ θ . m ˈ O Ά ˈ ~ Ă J . ų У 2016 25 6 411 414.

22 . Ί Ă Ң ♥ ´ ˈ ~ ĭ J . Ψ ├ 2019 38 9 170 173.

23 . ˈ ~ hCG Ά^m O Ă ẇ í ŏ J . Ψ ₔ ├ 2017 12 19 65 66.

24 O Donnell A Mcparlin C Robson SC et al. Treatments for hyperemesis gravidarum and nausea and vomiting in pregnan cy a systematic review and economic assessment J . Health Technol Assess 2016 20 74 1392 1401.

25 . δ δ . ˈ ~ Ά ˈ í J . 2016 26 24 17 17.

CysC α1 MG β2 MG

C CysC α1 α1 MG Ю β2 β2 MG ў
ﻅ COPD Ψ ө e Ю Á Ќ Ă ɻ 2013 1
2016 8 206 ҳ COPD ˇ Õ ♥ SPO2 Õ ε 64 ҳ ѳΨ 86 ҳ ѳ
56 ҳ ѳ Ɠ ҁ 50 ҳ ѯ Ə ε 4 CysC ѳα1 MG ѳβ2 MG ѳ Scr ѳ
BUN ά ROC Õ CysC ѳα1 MG Ю β2 MG COPD Ю COPD´ Ќ ө
e Pearson Õ CysC ѳBUN ѳα1 MG ѳβ2 MG Á Scr Ă ɻ COPD
CysC ѳα1 MG ѳβ2 MG ҕ ҁ COPD Scr ѳBUN Á τ P>0.05
Cys C ў ѳΨ ѳ ҕ Ҥ P<0.05 α1 MG ѳβ2 MG ў Ψ ѳ
ҕ Ҥ P<0.05 Á CysC ѳα1 MG ѳβ2 MG P<0.05 Á Ψ
CysC P<0.05 α1 MG ѳβ2 MG Ю Cys C ҕ Á Scr Ⅵ Ă ҕ P<0.05 ɻ
ROC CysC ѳα1 MG ѳβ2 MG Ю ´ COPD ; ε 0.810 ѳ0.743 ѳ0.812 ѳ0.915 ѳ
0.936 ȳ e ε 1.74 mg/L ѳ12.22 mg/L ѳ2.34 mg/L Õ ά ε 0.806 ѳ0.726 ѳ0.794 ѳ0.903 ε
0.795 ѳ0.705 ѳ0.782 ѳ0.903 CysC ѳα1 MG ѳβ2 MG Ю ´ ; Õ ά ε 0.864 ѳ0.832 ѳ0.812
ȳ e Õ ά ε 1.62 mg/L ѳ12.08 mg/L ѳ2.58 mg/L Õ ά ε 0.824 ѳ0.816 ѳ0.808 ѳ0.914 Õ ά ε
0.786 ѳ0.774 ѳ0.762 ѳ0.903 ɻ ´ CysC ѳα1 MG ѳβ2 MG Ҥ COPD ⅟
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The detection and significance of CysC α1-MG β2-MG of early kidney injure in patients with chronic obstructive pulmonary disease

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Dongying New District Hospital Dongying Shandong China 257000

ABSTRACT Objective To investigate the detection value of serum cystatin C CysC α1 microglobulin α1 MG and β2 microglobulin β2 MG in chronic obstructive pulmonary disease COPD and correlation of the early stage of hypoxia kidney injury. Methods A total of 206 elderly patients with COPD from January 2013 to August 2016 in our hospital were selected as the study object. Based on the blood gas analysis they were divided into COPD with mild moderate and severe hypoxia groups. A total of 50 healthy people were selected as control group. The CysC α1 MG β2 MG Scr levels were detected and compared for analysis. The ROC curve was used to analyze the diagnostic value of CysC α1 MG and β2 MG on COPD and COPD combined with renal injury. Pearson correlation analysis was used to analyze the correlation between CysC BUN α1 MG and β2 MG and Scr. Results Compared with control group CysC α1

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MG β2 MG levels in COPD group significantly increased and the Scr levels had no statistical significance on the difference with the control group P>0.05 . CysC level in mild moderate and severe hypoxia group were significantly higher than that in control group and the differences had no statistical significance P<0.05 α1 MG β2 MG levels in moderate and severe hypoxia group were significantly higher than that in control group P<0.05 . Co[illegible] signd ᵀ ɲ werd v ȳ l ˛ d the in 1 tHe MG in¾

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AUC ɵ Ą COPD Ƙ ɵ e ɟ ᵹ ɲ´ ɯ P<0.05 ɛ Ė τ ɟ

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2.1 COPD Á CysC ɷα1 MG ɸβ2 MG ɷ Scr ɷBUN COPD CysC ɷα1 MG ɸβ2 MG ᵹ Ɦь P<0.05 Ξ Scr ɷBUN τ P>0.05 1 ɟ

2.2 4 CysC ɷα1 MG ɸβ2 MG ɷScr ɷBUN Á ɷΨ ɯ CysC ɯ ɯ Ψ ɷ α1 MG ɸβ2 MG ᵹ ╗ τ P<0.05 Á Ψ ɷ CysC ɯ α1 MG ɸβ2 MG ᵹ ╗ τ P<0.05 Á Ψ CysC ╗ τ P<0.05 2 ɟ

1 $\bar{x}\pm s$

Table 1 Comparison of related indicators between the 2 groups $\bar{x}\pm s$

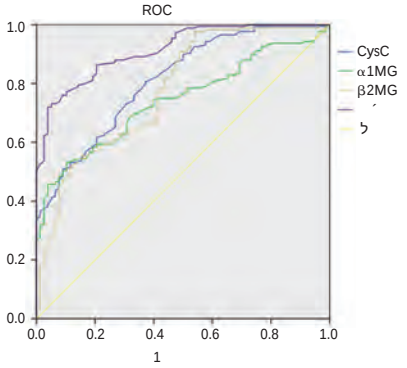
ᾳ	n	Scr mol/L	BUN mmol/L	CysC mg/L	α1 MG mg/L	β2 MG mg/L
	50	76.01±15.76	5.84±1.43	1.14±0.22	8.84±1.56	1.64±0.26
COPD	206	83.36±34.39	6.43±3.12	1.69±0.53	13.63±4.35	2.63±1.15
t e		1.318	1.562	4.472	5.124	4.115
P e		0.231	0.128	0.013	0.004	0.021

2 4 $\bar{x}\pm s$

Table 2 Comparison of related indicators between the 4 groups $\bar{x}\pm s$

ᾳ	n	Scr mol/L	BUN mmol/L	CysC mg/L	α1 MG mg/L	β2 MG mg/L
	50	76.01±15.76	5.84±1.43	1.14±0.22	8.84±1.56	1.64±0.26
	64	80.58±17.43	6.36±1.61	1.37±0.41[a]	9.54±1.85	1.93±1.35
Ψ	86	86.56±19.23	6.73±1.98	1.64±0.72[ab]	12.24±1.81[a]	2.64±1.81[a]
	86	93.38±21.73	7.04±2.09	1.98±1.23[abc]	17.42±2.79[ab]	3.72±2.79[ab]
F e		9.677	6.379	7.240	8.660	9.275
P e		0.000	0.001	0.000	0.000	0.000

2.3 CysC ɷα1 MG ɸβ2 MG COPD ROC ROC ŭ CysC COPD ; ɛ 0.810 ȳ e ɛ 1.74 mg/L ę COPD Ƙ ɛ 0.806 ɛ 0.795 α1 MG ; ɛ 0.743 ȳ e ɛ 12.22 mg/L ę COPD Ƙ ɛ 0.726 ɛ 0.705 β2 MG ; ɛ 0.812 ȳ e ɛ 2.34 mg/L ę COPD Ƙ ɛ 0.794 ɛ 0.782 3 ´ ; ɛ 0.915 ɛ 0.903 ɛ 0.897 ь 1 ɟ



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1 CysC α1 MG β2 MG COPD ROC

Figure 1 ROC curves of CysC α1 MG β2 MG for COPD prediction

2.4 CysC ɷα1 MG ɸβ2 MG ɷBUN Á Scr Ą ŭ Pearson ŭ CysC r=0.672 P=0.011 ɷ α1 MG r=0.415 P=0.031 ɸβ2 MG r=0.550 P= 0.029 BUN r=0.023 P=0.436 ᵹ Á COPD Scr Ą Ė τ P< 0.05 ɟ

2.5 CysC ɷα1 MG ɸβ2 MG COPD Ƙ ROC ROC ŭ CysC ; ɛ 0.856 ȳ e ɛ 1.62 mg/L ę COPD Ƙ ɛ 0.824 ɛ 0.786 α1 MG

; ε 0.722 ȳ e ε 12.08 mg/L ẹ ה COPD CysC ɑα1 MG ɑβ2 COPD Ϗ ε 0.816 ε MG φ ╗ Scr ╗ ˝ ẋ Scr ǧ א 0.774 β2 MG ; ε 0.812 ȳ e ε ʾ ɔ ╗ ε c ʾ 2.58 mg/L ẹ COPD Ϗ ε כ Scr ה ל כ ɟ CysC ɑα1 MG ɑβ2 0.808 ε 0.762 ɕ ´ ; MG ʾ ל כ Scr ʾ Ό ╗ ε 0.936 ε 0.914 ε 0.903 ﻩ 2 ɟ Ά 13 m ɟ ʾ w CysC ɑα1 MG ɑ β2 MG Ͳ ɑα1 = Ư2 %*ò ₹€ € ɑOb

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COPD Θ εm ʾ ƒ ã ž ɔ ж COPD ´ Ϗ 8 ɟ ẋ Ỉ ʾ ˝ ƒ ʾ ɔ 9 10 ɟ א ʾ ẇ ¨E ʾ m ɔ ẇ ¨Ą Ă ɟ CysC ε Ł ¨Ą ʿĮ 2 Ψ ϟ φm ẹ ˝ ɔ ɑ ɑ ǫ̈ ĭ ε CysC Ά COPD ה ה ẇ COPD ה ɑ Ϗ ʿY Ă ɟ α1 MG ε ʾ Ϗ ɑβ2 MG א Ъ ʾ ɟ ´ COPD ʾ Ϗ COPD O ʾ ɔ ɔ ϟ l ς ˘ ž ẇ ה Ϗ ɟ w Scr Ь א ʾ ל Ỹ ж ɔ ǫ̈ ɑ ɑ F ẇ l Ỹ ĭ ǧ א ʾ ל כ ˝ ɟ CysC ɑα1 MG ɑβ2 MG Ь ŏ ǧ l Ỉ ˝ ɔ ﻁ ĭ ζ ǧ ɔ ϟ ʿO ɔ ɕ ϟ ¨E ǧ Ϗ Ψ ◗ ɔ ╗ 11 Ά Ж ☼ 12 ɟ

AML COX 2 VEGF p53

AML ǧ ǯ ђ Ψ ɔ 2 COX 2 ɞ Ǐ ɻ VEGF ɸp53 ɯ ~ ɵ e ɟ ɀ 2014 1 2019 1 80 ɂ AML Ə ɛ ɀ Ɦь ɾ l 40 ɂ Ə ɛ ώ~ ɯ COX 2 ɞVEGF ɸp53 ɞl ẍ ɻ ẍ ŭ ˘ Ą ~ ŭ ɛ ã n=48 ɻ ã n=32 Ξ COX 2 ɞVEGF ɸp53 Ξ Ψ CNSL ɲ ɔ Ə ROC ŭ COX 2 ɞVEGF ɸp53 ǧ AML ỵ ~ Ψ ɵ e ɟ COX 2 ɞVEGF ɯ p53 ɕ Ɦь Ė τ P<0.05 COX 2 ɞVEGF ɯ p53 ~ ɕ ώ ɳ Ė τ P<0.05 ɟ ~ l ẍ IgA ɗIgG ɗIgM ɕ ώ ɳ Ė τ P<0.05 ~ ẍ CD3+ ɞCD4+ ɞCD8+ ɞCD4+/CD8+ ɕ ώ ɳ Ė τ P<0.05 ɟ Ą ŭ COX 2 ɞVEGF ɯ p53 ɸ ǧ Ą *P*<0.05 ɟ ã ɻ ã AML COX 2 ɞVEGF ɯ p53 Ė τ *P*<0.05 ɟ ã ɻ ã AML Ψ Ɦ Ė τ P<0.05 ɟ ROC COX 2 ɞVEGF ɸp53 ɯ ´ ǧ CNSL Ψ ; AUC ŭ ǫ ɛ 0.836 95% *CI* 0.776~0.896 ɞ0.802 95% *CI* 0.730~0.873 ɞ0.716 95% *CI* 0.639~0.793 ɯ 0.905 95% *CI* 0.863~0.947 ɟ COX 2 ɞVEGF ɯ p53 Ɦь AML í ɯ ~ Ʈ Ė ɵ e ɟ ɔ 2 Ǐ ɀ p53

Expressions of COX-2 VEGF and p53 in elderly AML patients treated with decitabine and their prognosis

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ABSTRACT Objective To investigate the expression of serum cyclooxygenase 2 COX 2 vascular endothelial growth factor VEGF and p53 protein in elderly patients with acute myeloid leukemia AML treated with decitabine and their prognostic value. Methods 80 patients with AML admitted to our hospital from January 2014 to January 2019 were selected as the study group and 40 healthy people who underwent physical examination in our hospital were selected as the control group. The levels of COX 2 VEGF p53 protein humoral immunity and cellular immunity in the study group before and after treatment and the control group were compared and the correlation of indexes were also analyzed. According to the patients

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after treatment they were divided into complete remission group n=48 and incomplete remission group n= 32 . The levels of COX 2 VEGF p53 protein in the two groups were analyzed. The incidence of central nervous system leukemia CNSL between the two groups was compared. The predictive value of COX 2 VEGF and p53 protein in the prognosis of AML was analyzed using the receiver operating characteristic curve ROC . Results The levels of COX 2 VEGF and p53 proteins in the study group were significantly higher than those in the control group and the difference was statistically significant P<0.05 . However after treatment the levels of COX 2 VEGF and p53 protein in the study group were significantly lower than those before treatment. The difference was statistically significant P<0.05 . After treatment the levels of humoral immune indicators IgA IgG and IgM in the study group were significantly lower than before treatment P< 0.05 . After treatment the cell immune indicators of CD3 + CD4 + CD8 + and CD4 + / CD8 + in the study group were significant lower than before treatment P<0.05 . Correlation analysis indicates that there is a significant positive correlation between COX 2 VEGF and p53 proteins P<0.05 . The difference in COX 2 VEGF and p53 protein levels between AML patients in complete remission group and incomplete remission group was statistically significant P<0.05 . The difference in median survival between AML patients in complete remission group and incomplete remission group was statistically significant P<0.05 . ROC curve results showed that the area under the curve AUC of COX 2 VEGF p53 protein and combined detection in CNSL diagnosis were 0.836 95%CI 0.776~0.896 0.802 95%CI 0.730~0.873 0.716 95%CI 0.639~ 0.793 and 0.905 95%CI 0.863~0.947 . Conclusion The levels of serum COX 2 VEGF and p53 are of great significance for the clinical treatment effect and prognosis evaluation of elderly AML patients.

KEY WORDS Acute myeloid leukemia Old age Cyclooxygenase 2 Vascular endothelial growth factor p53 protein

acute myeloid leukemia

AML / w ٧ ١ Ψ Ɑ ١ ھ ε m ɟ [1] ŏ 65 w ɔ ж AML ה ę ђ ж 10 ʁ Ά ж l ٬Ω ɞ l Ă ɟ ɔ AML ɟ ж ŏ Ψ w ɔ Ă ٬Ḥ ɔ w + ẋ + ṗ ė Ara c+ACR+G CSF CAG ε AML ɟ ŋ ђ ε m DNA ɲ ɔ Ă ٬Ḥ ę Ь Ă ھ ɞŏ ɔ ١ ̧ Ĕ H Ė Ə ɟ ũ [2] ŋ ђ ´ CAG ɔ Ь ٦ Ъ ɔ ˜ ɟ ɔ 2 Cyclooxygenase 2 COX 2 ’ ̧ l ה ١ ה ę Ά ˜ ٬Y Ă ŏ Ψ ٣ [3] ɟ ˚ Ь ھ Ї ė vascular endothelial growth factor VEGF ε l ė ε VEGF Ά ה ה ١ ˜ ŏ Ă [4 5] ɟ P53 ɲ ė ѽ Ά Ă ɲ ė ę p53 Ш ’ Ə ε ɞ ١ ˜ [6] ɟ ė COX 2 ɞVEGF ɞp53 ’ ε ŋ ђ AML Ψ ẇ ˜ Ţ Ъ ٦ Ъm Ė l ; ɟ

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1.1 m

٦ 2014 1 2019 1 80 ٩ AML Ə ε ę Ψ 49 ٩ 31 ٩ 60~76 ج 68.8±2.4 M1 ى 8 ٩ M2 ى 14 ٩ M4 ى 18 ٩ M5 ى 31 ٩ M6 ى 9 ٩ ɟ ٦ ̃ Ь ɾ l 40 ٩ Ə ε ę Ψ 24 ٩ 16 ٩ 60~78 ج 68.3± 2.5 ɟ Ξ ŏ ѽ ɞ í m ɔ τ P>0.05 Ė ’ ɟ Ї Ң ٧ Ҝ ɟ Ấ Ấ ج ´ ћ Ά Ấ ђΨ Ă Ь AML Ấ [7] ج ṗ 60 AML MICM ŭ ى ε M1 ɞM2 ɞM4 ɞM5 ɞM6 ى ẇ ج ẅ ŭ Ъ ̃ Ш ɟ Ấ ɔ Ă

ɔ O ˈ ´ Ĭ ŏ ɞẍ ẇ ę ĥ Ң ˝ ɔ Ψ Ȯ ɟ

1.2 AML ئى ĥ ´ CAG ئى ĥ 15 mg/m^2·d d1 d5 ẋ 20 mg/d d1 d4 10 mg/m^2 q12 h d1 d14 ; ṇ ɛ 150 g q12 h d1 d14 ; >20×10^9/L φ ɟ ğ ~ ã ∧ ã ʒ ɟ

1.3

1.3.1 COX 2 ɞVEGF ẇ p53 ğ Ấ ~ ɳ 5 mL 30 min 3 000 r/min 15 min ŏ ɔ ẍ Ч enzyme linked immunosorbent assay ELISA COX 2 ɞVEGF ẇ p53 Ң ɔ O ắ ˘ ɟ Ə O Ң ; ɟ AML ğ ɔ 14 d˜ Ố ɳ 5 mL ˚ ˛ ɔ ƾ ɔ Ỹ ɟ

1.3.2 I ẍ ẇ ẍ ğ ѽ ẇ 14 d˜ ẍ I ẍ IgA ɞIgG ɞIgM Ң ɔ ắ ˘ ɟ CyFlow ã ŏ Ѧ ۵ Partec ắ ˘ ẇ ę Ң ẍ T Ж ی CD3+ ɞCD4+ ɞCD8+ ƾ ɔ CD4+/CD8+ ɟ

1.3.3 ~ ɔ ~ 1~5 Ỹ ɔ ת Ψ central nervous system leukemia CNSL Ỹ ɟ CNSL Ấ ˅ ћ Ψ ۵ ж Ą ≟ 2016 ĥ[8] ó ɟ

1.4 ŏ SPSS 20.0 Θ ŏ ѡ % χ^2 ѡ $\bar{x} \pm s$ t ɟ Spearman Ặ ŏ COX 2 ɞVEGF ẇ p53 φ Ặ ẇ ę Ą ẍ Ặ ɔ Ə receiver operator characteristic curve ROC ŏ COX 2 ɞVEGF ɞp53 ğ CNSL Ψ ɵ [e] ɟ P<0.05 ε Ė τ ɟ

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2.1 Ξ ƾ ɔ Ỹ ѽ COX 2 ɞVEGF ẇ p53 ҕ Ң ж ~ ҕ ѽ ң Ė τ P<0.05 ɟ ~ I ẍ ∧ ẍ ҕ ѽ ң Ė τ P<0.05 ɟ ; 1 ɟ

1 $\bar{x} \pm s$

Table 1 Changes of serum indicators in the 2 groups $\bar{x} \pm s$

	n=80		n=40	t [e]	P [e]
	ѽ	~			
COX 2 ng/L	53.2±6.1	31.0±3.1	30.3±3.2[a]	29.019	0.000
VEGF pg/mL	158.8±35.7	72.2±7.5	70.7±6.9[a]	21.233	0.000
p53 ng/L	211.5±33.8	108.3±13.7	106.7±14.9[a]	25.309	0.000
IgA g/L	2.3±0.9	1.5±0.7	-	4.276	0.000
IgG g/L	11.7±1.9	9.1±1.6	-	9.362	0.000
IgM g/L	1.0±0.2	0.7±0.2	-	9.487	0.000
CD3+ %	54.2±6.6	38.7±4.5	-	17.355	0.000
CD4+ %	34.2±4.3	28.8±3.2	-	9.011	0.000
CD8+ %	29.0±2.7	20.9±2.6	-	19.328	0.000
CD4+/CD8+	1.2±0.3	0.9±0.2	-	7.442	0.000

Ą [a]P<0.05 ɟ

2.2 Ą ŏ p53 φ ğ Ą P<0.05 Ą ŏ COX 2 ɷVEGF ẇ 2 ɟ

2 COX 2 VEGF p53

Table 2 Correlation analysis of COX 2 VEGF and p53 proteins with various indicators

	COX 2		VEGF		p53	
	r e	P e	r e	P e	r e	P e
COX 2	-	-	0.583	0.000	0.612	0.000
VEGF	0.501	0.000	-	-		0.000
p53	0.559	0.000	0.537	0.000	-	-

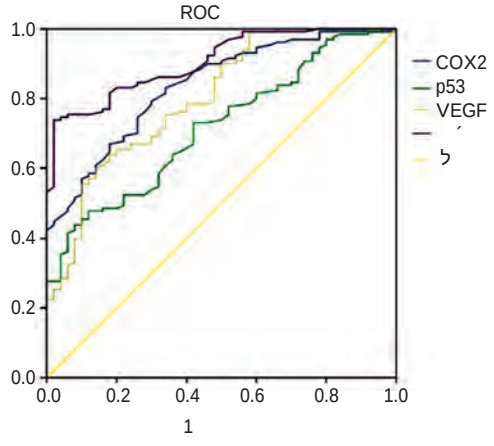
2.3 AML COX 2 ɷVEGF ɳ Ɦ ã Ė ẇ p53 ẇ Overall Survival OS τ P<0.05 ɟ ã AML OS Ɦ ã Ė τ P< ã AML COX 2 ɷVEGF ẇ p53 0.05 3 ɟ

3 AML $\bar{x} \pm s$

Table 3 Comparison of various indicators in different treatment outcomes of elderly AML patients $\bar{x} \pm s$

ą	n	COX 2 ng/L	VEGF pg/mL	p53 ng/L	OS
ã	48	31.5±4.4	70.3±7.7	102.3±10.4	12.6±2.7
	32	44.1±5.3	166.9±20.8	198.7±10.8	5.9±1.6
t e		11.555	25.148	39.997	13.914
P e		0.000	0.000	0.000	0.000

2.4 COX 2 ɷVEGF ẇ p53 CNSL ROC ROC COX 2 ɷVEGF φp53 ẇ ´ ğ CNSL Ψ ; AUC ŏ ą ε 0.836 95%*CI* 0.776~0.896 ɷ0.802 95%*CI* 0.730~0.873 ɷ0.716 95%*CI* 0.639~0.793 ẇ 0.905 95%*CI* 0.863~0.947 ɟ ѧ 1 ɟ



1 COX 2 VEGF p53 CNSL ROC

Figure 1 COX 2 VEGF and p53 predict ROC curves of CNSL

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ɔ ɻ ˚ ɗ AML í ą̈ Ъ ╗ ж щ ŏ Ά ğ Ψ ε ɟ ئ ђ ˘ ɲ ɔ ´ CAG ε AML ɟ ˘ ɲ ɔ ' ˛ G0 Ầ ɻ ѩ S ъ ╗ ɔ Ɦ Ҡ 9 ɟ ئ ђ ' w Ầ DNA Ά DNA ɲ ɲ ɔ ъ ɲ ɹ ą̈ AML 10 ɟ ğ l ɷ ɷ Ψ Ά ğ ' Y Ă ɷѩ Θ ɟ ח 11 Ά ' ' Y ɻ É w ъ ʄ ę P É ĕ H ɟ 12 COX 2 Y ㄴ Ά ח ɻ ח ę ' ㄴ Ά COX 2 ẇ ę ώ Ω У ' ˛ DNA ´ ɻ ѩ COX 2 ' Ά ; ĕ H ח l l ẍ ɻ ẍ ɟ

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COX 2 ɞVEGF ẇ p53 OS

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COX 2 ɞVEGF ɵp53 ´ ğ CNSL

Ψ AUC Ҥ 3 Ţm ɟ COX 2 ɞ

VEGF ẇ p53 ´ ğ AML ئى ђ

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3 Carter BZ Mak PY Wang X et al. An ARC regulated IL1β/Cox 2/PGE2/β catenin/ARC circuit controls leukemia microenvironment interactions and confers drug resistance in AML J . Cancer Res 2019 79 6 1165 1177.

4 Jabari M Allahbakhshian FM Salari S et al. Hypoxia Inducible Factor1 A HIF1α and Vascular Endothelial Growth Factor A VEGF A Expression in De Novo AML Patients J . Asian Pac J Cancer P. 2019 20 3 705 710.

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12 Sajiki Y Konnai S Okagawa T et al. Prostaglandin E2 Induced Immune Exhaustion and Enhancement of Antiviral Effects by Anti PD L1 Antibody Combined with COX 2 Inhibitor in Bovine Leukemia Virus Infection J . J Immunol 2019 203 5 1313 1324.

13 Tugcu G Sipahi Ha Aydin A. Application of a Validated QSTR Model for Repurposing COX 2 Inhibitor Coumarin Derivatives as Potential Antitumor Agents J . Curr Top Med Chem 2019 19 13 1121 1128.

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ė ẇ Ǐ ė Ǐ J . Ψ ۵ 2017 37 23 5858 5860.

16 Levine AJ. The p53 protein plays a central role in the mechanism of action of epigentic drugs that alter the methylation of cytosine residues in DNA J . Oncotarget 2017 8 5 7228 7230.

17 Pan R Ruvolo V Mu Hong et al. Synthetic Lethality of Combined Bcl 2 Inhibition and p53 Activation in AML Mechanisms and Superior Antileukemic Efficacy J . Cancer cell 2017 32 6 748 760.

CD40 CD40L BAFF ITP

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Ά ヾ Ą r<0 P<0.05 ɟ ROC ŏ ヿ CD40 ɷCD40L ᷾ BAFF ITP
ɵ e ᷿ AUC>0.7 P<0.05 ɟ ITP ヿ CD40 ɷCD40L ITP Ė
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CD40 CD40L BAFF ITP

The predictive value of peripheral blood CD40 CD40L expression and serum BAFF level on the efficacy of patients with immune thrombocytopenic purpura

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ABSTRACT Objective To investigate the predictive value of peripheral blood CD40 CD40L expression and serum BAFF level in the treatment of immune thrombocytopenic purpura ITP patients. Methods 80 patients with ITPadmitted to our hospital wererecruited as the observation group. 100 healthy people who underwent physical examination in our hospital were selected as the control group. Peripheral blood CD40 CD40L expression and serum BAFF level were observed in both groups. The patients were divided into two groups according to the results of efficacy judgment. The expression of CD40 CD40L and serum BAFF in peripheral blood from the two groups were compared. Results The expression of CD40 CD40L and serum BAFF in the peripheral blood in the observation group were significantly higher than those in the control group P<0.05 . The expression of CD40 CD40L and serum BAFF in peripheral blood of patients with non re

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sponse group were significantly higher than those in response group P<0.05 . The expression of CD40 CD40L and serum BAFF in peripheral blood of patients with ITP were negatively correlated with curative ef fect r<0 P<0.05 . ROC curve analysis results show that the peripheral blood CD40 CD40L and BAFF have high predictive value for ITP efficacy all AUC>0.7 P<0.05 . Conclusion The peripheral blood CD40 and CD40L in patients with ITP have a high predictive value for the efficacy of ITP patients.

KEY WORDS Bone marrow CD40 CD40L Serum BAFF level ITP Curative effect

Ɑ ה ẍ ῎Ε idiopathic throm bocytopenic purpura ITP ε ί ɔ ẍ ч Ό ζ w ῎Ε ɞ ﮄ ε ẹ ζ ί [1,2] ɟ ה ῎Ặ ῞ ’ Ά Ɑ У Ι ʄ ﺱ ΐ ɔ ש ẍ א [3] ɟ B ﻍ ’ ﺱ B ẍ ɔ Ό ẍ ж ẹ ԋ ש ’ ẍ ɔ Ι ẍ ל ﻳ ẍ ה [4] ɟ ٩ CD40 ɞCD40L ש BAFF ﺆ ITP ה ה Ψ Ẻ τ ж Њ ɔ ITP ﻍ ﺆ ٩ CD40 ɞ CD40L ש BAFF ITP ɵ ᵉ w ε w ɟ

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2017 12 2019 3 ﺆ ɔ ITP 80 ʅ ש ғ Ι 100 ʅ ɟ ẹ Ψ 44 ʅ 36 ʅ 23~58 ﺝ 42.23±6.11 BMI 21~29 kg/m^2 ﺝ 26.58±3.05 kg/m^2 ɟ 55 ʅ 45 ʅ 21~59 ﺝ 42.22±6.31 Ι Body Mass Index BMI 20~28 kg/m^2 ﺝ 26.33±2.88 kg/m^2 ɟ Ẫ ῎Α ΄ ɦ ж Ɑ ה ẍ Ψ ﻪ Ό Ằ ɧ [5] Ψ Ặ ῞ ΄ Ặ ɔ ῟ ш ɟ ῎Α ה ITP Ό ɟ Ξ ᾷ ɞ ɞ BMI ﺝ τ P>0.05 Ẻ τ ɟ

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٩ CD40 ɞCD40L ˥ ῷ ש ٩ 4 mL ╥ ẋ ẉ Ι ж CD40 FITC ש CD40L PE 10 L Ḥ ﺝ Њ ﻪ R&G ắ ₱ ; w PBS ỵ ﻪ ΐ ắ Attune NxT ﻳ ₳ 10 000 Y w ₳ ϔ ɵ ŭ ɟ BAFF 2 mL ﺆ 3 000 r/min ; 15 min ٩ ˥ 0.8 mL ἀ ᾰ w ẍ ٩ BAFF Ḥ Њ ﻪ Sigma ắ ɟ ó ῎Α ẫ ﺆ 100×10^9 L w ɔ Ό ﺆ 30×10^9 L w ɔ ΄Υ ῷ ﮄ 2 ช w ɔ Ό ῞ 30×10^9 L Ά ῷ ɔ ╗ ῞ 2 ช Ό Ό ɟ ɔ ῎Α ŭ ε 2 ẫ ש ῷ Ẫ א ῷ Ẫ א ɟ

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SPSS 22.0 ɵ ŭ $\bar{x} \pm s$ t ŭ Ặ ŭ Perason Ặ w ɔ ə ROC ŭ ٩ CD40 ɞCD40L ש BAFF ITP ɵ ᵉ w P<0.05 ε Ẻ τ ɟ

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2.1 2 ɔ ٩ CD40 ɞCD40L ש BAFF

٩ CD40 ɞCD40L ש BAFF ﺝ Њ Ẻ τ P<0.05 ɟ 1 ɟ

1 2 CD40 CD40L BAFF $\bar{x}\pm s$

Table 1 Comparison of CD40 CD40L expression and serum BAFF levels in peripheral blood of 2 groups of patients $\bar{x}\pm s$

ά	CD40	CD40L	BAFF ng/L
	7.31±2.07	3.24±1.06	603.17±112.38
	12.92±3.05	6.09±1.70	716.44±137.48
t e	6.721	5.947	2.936
P e	0.000	0.000	0.005

2.2 ‟ ’ ٧ CD40 ϖCD40L ώ BAFF

א ٧ CD40 ϖCD40L ώ BAFF ϑ Ηь א Ė τ P<0.05 ɟ 2 ɟ

2.3 ITP ٧ CD40 ϖCD40L ώ BAFF Ά Ą ŏ

ITP ٧ CD40 ϖCD40L ώ BAFF ϑ Ά ٧ Ą r e ŏ ά ε -0.691 ϖ -0.713 ϖ 0.652 ɟ Ė τ P<0.05 ɟ

2 CD40 CD40L BAFF $\bar{x}\pm s$

Table 2 Comparison of CD40 CD40L expression and serum BAFF levels in peripheral blood of patients with different curative effects in the observation groups $\bar{x}\pm s$

ά	n	CD40	CD40L	BAFF ng/L
א	56	11.63±3.73	5.61±1.14	683.08±111.88
א	24	15.92±5.09	6.88±1.25	804.07±117.65
t e		2.127	2.237	2.155
P e		0.045	0.034	0.040

2.4 ROC ŏ

ROC ŏ CD40 ITP cutoff e ε 12.28 % AUC ε 0.892 ε 83.16% ε 92.06% ٧ CD40L ITP cutoff e ε 6.08% AUC ε 0.784 ε 81.75% ε 90.25% BAFF ITP cutoff e ε 745.02 ng/L AUC ε 0.708 ε 81.02% ε 90.14% ɟ ъ 1 ɟ

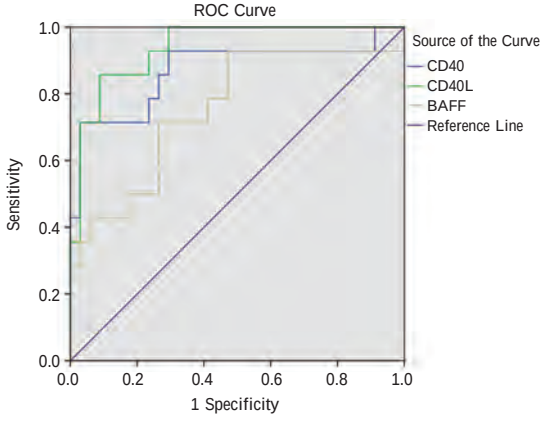

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Figure 1 ROC analysis chart

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1 Iwasa T Nakamura K Ihara E et al. The Effective Treatment with Cyclosporine of a Ulcerative Colitis Patient with Concurrent Idiopathic Thrombocytopenic Purpura Who Subsequently Developed Spontaneous Pneumomediastinum J . Intern Med 2017 56 11 1331 1337.

2 Nakao H Ishiguro A Ikoma N et al. Acquired idiopathic thrombotic thrombocytopenic purpura successfully treated with intravenous immunoglobulin and glucocorticoid A case report J . Medicine 2017 96 14 e6547.

3 Shimazu Y Uchiyama T Mizumoto C et al. Concurrent Autoimmune Neutropenia and Idiopathic Thrombocytopenic Purpura Associated with IgG4 related Diease J . Intern Med 2018 57 13 1911 1916.

4 Khoury HJ Collins RH Blum W et al. Immune responses and long term disease recurrence status after telomerase based dendritic cell immunotherapy in patients with acute myeloid leukemia J . Cancer 2017 123 16 3061 3072.

5 Ψ ⊧ ├ Ж ŏ Ж Ά . ж Ɑ ח ẍ Ϊ̈E Ψ ۵ Ὸ Ă II J . Ψ ⊧ 2011 3 214 216.

6 Takase K Kada A Iwasaki H et al. High dose Dexamethasone Therapy as the Initial Treatment for Idiopathic Thrombocytopenic Purpura Protocol for a Multicenter Open label Single Arm Trial J . Acta Med Okayama 2018 72 2 197 201.

7 Ichimata S Kobayashi M Honda K et al. Acquired amegakaryocytic thrombocytopenia previously diagnosed as idiopathic thrombocytopenic purpura in a patient with hepatitis C virus infection J . World J Gastroenterol 2017 23 35 6540 6545.

8 Segna D Dufour JF. Other Extrahepatic Manifestations of Hepatitis C Virus Infection Pulmonary Idiopathic Thrombocytopenic Purpura Nondiabetes Endocrine Disorders J . Clin Liver Dis 2017 21 3 607 629.

9 Ackv DN Annichinobizzacchi JM Maximo CA et al. Patterns of care and burden of chronic idiopathic thrombocytopenic purpura in Brazil J . J Medical Econ 2017 20 8 1.

10 Aref S Elghonemy MS Elaziz SA et al. Impact of serum immunoglobulins level and IL 18 promoter gene polymorphism among Egyptian patients with idiopathic thrombocytopenic purpura J . Hematology 2017 22 2 99 104.

11 Chen J Li JH Zhao SJ et al. Clinical significance of costimulatory molecules CD40/CD40L and CD134/CD134L in coronary heart disease A case control study J . Medicine 2017 96 32 e7634.

12 Chen JM Guo J Wei CD et al. The association of CD40 polymorphisms with CD40 serum levels and risk of systemic lupus erythematosus J . Bmc Genetics 2015 16 1 121.

13 Petramala L Iacobellis G Carnevale R et al. Enhanced Soluble Serum CD40L and Serum P Selectin Levels in Primary Aldosteronism J . Horm Metab Res 2016 48 07 440 445.

14 Lin XF Ten XL Tang XB et al. Serum soluble CD40 ligand levels after acute intracerebral hemorrhage J . Acta Neur Scand 2016 133 3 192 201.

15 Elizondo D Andargie T Kubhar D et al. CD40 CD40L crosstalk drives fascin expression in dendritic cells for efficient antigen presentation to CD4+ T cells J . Int Immunol 2017 29 3 121 131.

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RCC ɐWT 1 ɐCK20 ɐCD57 ɐSyn ɐCD56 ɐCgA ɐ
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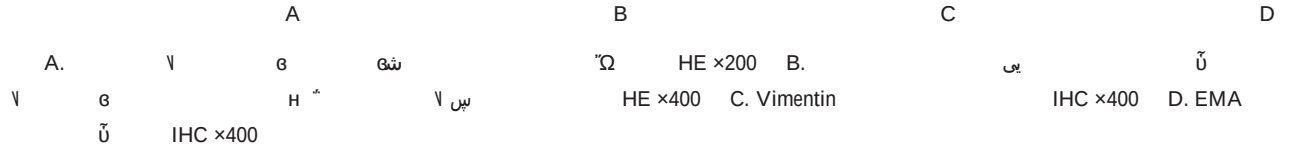

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1 SPRCC

Figure 1 Histological characteristics and immunophenotype of SPRCC

1

Table 1 The clinical datas and immunohistochemical results of SPRCC

ǫ̈	Ң	ẍ ɔ	ẍ ɔ
73	4×3×2 cm	CKpan ɐCK7 ɐCK8/18 ɐCK19 ɐ P504S ɐCD10 ɐEMA ɐPAX 8 ɐ Vimentin ɐKi 67 1%	RCC ɐWT 1 ɐCK20 ɐCD57 ɐSyn ɐ CD56 ɐCgA ɐCD117 ɐDesmin ɐSMA ɐ Myogenin ɐS 100 ɐE cadherin

3

3.1 F

† ה ğ Ψ 2
Ң 5 ε 80%~90% ɟ ל ' ש א ´
ה ɟ PRCC m Ė † †
ï w Ь
ɟ l m ৲
Ό ϭש ش ל ‴
˜Ω ' ˆ Ƀ ɟ ɔ '
‴ ৲ † †
ɡ † ɣ
৲ ל ל ę Ψ '
ھ ز Ǐ l
Ÿ ৲
² ɟ ė PRCC ζ ŏ ε I ىي ৲ II ىي I ىي
† ₸ ˝Ω ³ ɟ
II ىي ŏ س ৲
ˆ ˝Ω ɟ I ىي ל ~ Ь
II ىي ⁴ ɟ PRCC Ė ė ىي † † ε Ė
† ´Y ė ىي
† 50% w ɔ ⁵ ɟ
† Ж ىي Ə ε PRCCm Y
Ж ىي ζ ε w ε ζ ŏ ˩ '
ε † Ч ɟ
Ό ש ھ ৲
ھ Ǐ ϐ ৲ Ǐ ' ˜
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ɔ ς ' Ό ⁶ ɟ ˝Ω
ŏ ىي ৲ ϐ
н ‴ ৲ ϭس
ą̈ ŏ ŏ ɟ 2016
WHO ŏ ƒ
WHO/ISUP Ό 4 ŏ SPRCC
ε WHO/ISUP1 2 ⁷ ɟ ä ىي CK8/
18 ϭCK19 ϭEMA ϭCK7 ϭCD10 ϭP504S ϭPAX 8 w ש
Vimentin ‴ CK20 ϭRCC ϭWT 1 ϭCD57 ϭ
S 100 ϭCD117 ⁸ ⁹ ɟ
ʒ ~ 39 Y m Ỹ
ה ϭ ɟ SPRCC m Ң
í ŏ ~ ¹⁰ ɟ

3.2 ą̈

SPRCC Ά ~ ϭس

w ש † Ч
ą̈ ɟ

3.2.1 SPRCC Ά ~ ą̈

~ metanephric adenoma ש ~
m ‖ ŏ ' ה
Ь ˘ ж Ь ' ¥
ھ ש ɟ ~ ɔ ŏ ɔ
~ ę w ж φ ε
ŏ ɔ ¹¹ ɟ
l ' Ά ৲ م ظ
' 15cm ´Y ' Ό ϭس
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‴ ę l ₸ ę ש ä
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ε ŏ ɔ ¹² ɟ ä ىي
Ң ŏ CK ŏ CK ŏ
Vimentin ɟ ' CKpan ϭCD57 ש
WT 1 EMA ৲ P504S ج ¹² ¹³ ɟ
SPRCC Ά ~ w ש ɔ ε ζ ىي
ą̈ Cadherin17
CDH17 ğ 81%~ ğ ɔ
ε ζ ىي ৲ SPRCC ج ε
m ä ¹⁴ Ь Ξ
˩ ą̈ ɟ

3.2.2 SPRCC Ά س ą̈

س renal oncocytoma '
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س ɟ í
ɣ l ɡ ה ɟ ה
ğ 60~70 m ϐ ~
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l ɔ ₸ ´ ה m l
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Ψ Ό ğ
l ɔ Ά SPRCC ˩ ą̈ ɟ
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ε m ي س ε
н ˝H ω ŏ
ŏ ϭس ; Ά SPRCC
ą̈ ¹⁵ ɟ

COPD CysC VEGF IL 17 ACTA

1 1 2 3

C CysC ɞ Ỉ ɻ VEGF ɞ ч 17 IL 17 ɞ A ACTA ʭ ɦ COPD ¥ O ㇵ ㇴ Ψ ɟ ʔ 2016 3 2019 3 224 ʒ COPD ה O ㇵ ㇴ ŏ n=78 ɞ n=146 Ɠ ʔ̃ ɾ l 86 ʒ ε ɟ 3 ʷ̃ ~ CysC ɞVEGF ɗL 17 ɞ ACTA ŏ COPD ¥ O ㇵ ㇴ ɵ e ʊ Ą ŏ Ά APACHEⅡ ŏ Ą ʊ ~ ɵ e ɟ 3 CysC ɞVEGF ɗL 17 ɞACTA τ P<0.05 VEGF Ά Cys C ɗL 17 ɞACTA ㇶ Ą CysC ɗL 17 ɞACTA ㇶ Ą P<0.05 H CysC ɗL 17 ɞACTA ɞAPACHEⅡ ŏ Ɦ VEGF ɧ Ɦ P<0.05 VEGF Ά APACHEⅡ ŏ ㇶ Ą CysC ɗL 17 ɞACTA Ά APACHEⅡ ŏ ㇶ Ą P<0.05 CysC ɞVEGF ɗL 17 ɞACTA ´ COPD ¥ O ㇵ ㇴ ~ AUC 0.864 Ɦ ╥m ε 92.86% ε 70.00% ɟ CysC ɞVEGF ɗL 17 ɞ ACTA ʭ COPD ¥ O ㇵ ㇴ Ψ ㇶ Ά 'Y Ą ´ ε COPD ¥ O ㇵ ㇴ ʊ ~ ó ɟ C Ỉ ɻ ч 17 A ɦ ㇵ ㇴ

Changes of serum CysC VEGF IL-17 and ACTA levels in elderly patients with COPD and severe respiratory failure

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ABSTRACT Objective To in[illegible]YG 'J & Bs2 Â `┼PÕY

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tion group and analyzed the diagnostic value of serum indicators for elderly COPD with severe respiratory failure and the correlation between serum indicators and the correlation between serum indicators and APACHE Ⅱ score and the prognostic value were analyzed. Results The levels of serum CysC VEGF IL 17 and ACTA in the three groups were statistically significant P<0.05 VEGF was negatively correlated with CysC IL 17 and ACTA levels and CysC IL 17 and ACTA levels were positively correlated P<0.05 the serum levels of CysC IL 17 ACTA and APACHE Ⅱ score were higher in dead patients than in surviving patients and VEGF levels were lower than in surviving patients P<0.05 VEGF level was negatively correlated with APACHE Ⅱ score and CysC IL 17 and ACTA levels were positively correlated with APACHE Ⅱ score P<0.05 the combined serum levels of CysC VEGF IL 17 and ACTA in predicting the prognosis of COPD with severe respiratory failure in elderly patients 0.864 was greater than that of a single serum indicator with a sensitivity of 92.86% and a specificity of 70.00%. Conclusion Serum CysC VEGF IL 17 and ACTA levels are abnormally expressed in elderly patients with COPD and severe respiratory failure and are closely related to the disease and the combined detection is expected to be an effective method for diagnosis and prognosis of elderly COPD with severe respiratory failure.

KEY WORDS Cystatin C Vascular endothelial growth factor Interleukin 17 Activin A Chronic obstructive pulmonary disease Respiratory failure

Chronic obstructive pulmonarydisease COPD [1] >40 COPD 8.2% 5 50.0% [2] COPD [3] C Cystatin C CysC vascular endothelial growth factor VEGF 17 Interleukin 17 IL 17 A Activin A ACTA CysC VEGF IL 17 ACTA COPD

1

1.1

2016 3 2019 3 224 COPD n=78 n=146 86 P>0.05 1

1 n % $\bar{x}\pm s$

Table 1 Comparison of general data between the 2 groups n % $\bar{x}\pm s$

	n=78	n=146	n=86	F/χ^2	P
/	45/33	84/62	49/37	0.010	0.995
	65.97±2.15	66.19±1.74	65.80±1.83	1.218	0.297
COPD	9.89±1.22	10.02±1.13	9.72±1.30	1.693	0.186
kg/m^2	22.79±2.20	23.15±2.08	22.94±2.13	0.779	0.460
♥	20 25.64	37 25.34	21 24.42		
	13 16.67	24 16.44	14 16.28	0.019	1.000
	8 10.26	14 9.59	8 9.30		

Ấ ΆA ◆ ´ COPD Ặ ΆA [5]
ŏ ♥ <60 mmHg J ɔ ŏ ♥ > ´ ♥ ɟ
50 mmHg >60 Ẇ ◆
ˆ Ш ɟ ΆA ´ ɞ
ɞ 6 ٧ ã ƒ ė
ɞ ɜ و ɞẅ Ὼ
ﻝ ن و ٧ ٧ φ ´
ε ɟ ├ Ң ٧ Ж ΆA ɟ

1.2

1.2.1

ך 3 mL 12 min 3 000 r/min
ŏ ך Нь-70 ỳ ң ך ɟ ã
Ѧ ﻉ Bio Bad ắ ˘ w ẍ ٧
Cys C ɞVEGF ɗL 17 ɞACTA Ė
I Ə ɞ ΆA ɞ ɨ Ƀ
ɔ ΆA ɞ ɨ ŏ ợ ɨ 50 L ɞ
ɨ 50 L ₱ Нь 37 Ψ
ƒ I Ά Ɑ ẅ ŏ א ɟ 30 min ˜
◆ א 5 ˜ Ң
50 L Нь 37 30 min ɟ א
5 Ң ɟ 37 ẉ 10 min Нь
50 L א ɟ 15 min Ỉ
450 nm ˘ ˘ ٧ ẉ OD [e] ɟ

1.2.2

Ξ ◆ Є w ɞ و ɞ
ɞң ɞ ợ ɞ

ﻭ ﻧ ﻉ ﻉ ﻯ Ң
´ ♥ ɟ

1.2

3 CysC ɞVEGF ɗL 17 ɞACTA
ɟ ŏ CysC ɞVEGF ɗL 17 ɞACTA
φ Ặ ɟ ˜
ɞ Ά ɾ Ỹ ŏ Ⅱ APACHE
Ⅱ ŏ ẹ Ψ APACHEII ŏ ŏ 71 ŏ ɟ ŏ
CysC ɞVEGF ɗL 17 ɞACTA Ά APA
CHEII ŏ Ặ ɟ ŏ CysC ɞVEGF ɗL 17 ɞ
ACTA COPD ¥ O ٧ ٧ ˜
ɵ [e] ɟ

1.5

SPSS 22.0 Θ ŏ
$\bar{x} \pm s$ t n %
χ^2 ŏ
Pearson Ặ ŏ ɔ Ə
ROC ŏ ɞ ɵ [e] P<0.05
τ ɟ

2

2.1 3 CysC ɞVEGF ɗL 17 ɞACTA
3 CysC ɞVEGF ɗL 17 ɞACTA
τ P<0.05 ΄Y CysC ɗL 17 ɞ
ACTA > > VEGF
< < ɟ 2 ɟ

2 3 CysC VEGF IL 17 ACTA $\bar{x} \pm s$

Table 2 Comparison of serum CysC VEGF IL 17 and Acta levels between the 2 groups $\bar{x} \pm s$

ợ	n	Cys C ng/mL	VEGF mg/L	IL 17 ng/L	ACTA ng/L
	78	151.23±30.24[ab]	323.43±54.12[ab]	65.14±18.52[ab]	45.69±8.24[ab]
	146	130.47±24.58[b]	387.64±69.12[b]	44.87±15.76[b]	36.51±6.25[b]
	86	102.41±20.37	451.63±67.29	18.31±12.84	25.74±6.13
F [e]		79.021	79.267	182.984	178.781
P [e]		0.001	0.001	0.001	0.001

Ά [a]P<0.05 Ά ɾ [b]P<0.05

2.2 Ặ ŏ
VEGF Ά CysC ɗL 17 ɞACTA ٧
Ặ Ặ CysC Ά IL 17 ɞACTA ٧ Ặ
Ặ IL 17 Ά ACTA ٧ Ặ P<0.05 ɟ ɷ 1 ɟ

2.3 ˜ ɞAPACHEII ŏ
˜ H 28 ך 50
ך ɟ H CysC ɞIL 17 ɞACTA ɞ
APACHE Ⅱ ŏ Нь VEGF ң Нь
τ P<0.05 ɟ 3 ɟ

2.4 Ά APACHEII ŏ Ặ ŏ
VEGF r=-0.349 Ά APACHE Ⅱ
ŏ ٧ Ặ Ặ CysC r=0.836 ɞIL 17 r=
0.654 ɞACTA r=0.675 Ά APACHE Ⅱ ŏ ٧
Ặ Ặ τ P<0.05 ɟ


VEGF mg/L
450
400
350
300
250
200
100
80
60
40
20

Ж Ά Ά
א ц ъ m н ѵ Ч
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VEGF ; ' COPD ¥ O ѵ Ч
H Ɑ ɛ ' Ά VEGF ;
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У ĭ Ą ɟ
Ą COPD
ğ ζ Ɑ ɛ Ά ӧ א Ą [12 13] ɟ
COPD ¥ O ѵ Ч IL 17 ɔ
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ɔ Ψ Ь Ά Ҡ
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E COPD ¥ O ѵ Ч
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ACTA ´ ɐŏ ' ŏ ɐ ŏ
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Ά п
ɔ ' E н [14] ɟ п
CysC ɐVEGF ɗIL 17 ɐACTA ğm Ą
COPD ¥ O ѵ Ч Ė m ɵ e ɟ
m ´ CysC ɐVEGF ɗIL 17 ɐ
ACTA ´ COPD ¥ O ѵ Ч
~ ' 70.00% CysC ɐVEGF ɐ
IL 17 ɐACTA ´ ğ COPD ¥
O ѵ Ч ~ Ė m ɵ e ɟ
ɔ ' CysC ɐVEGF ɗIL 17 ɐACTA
´ ε COPD ¥ O ѵ Ч
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1 Shah S A Velardo C Farmer A et al. Exacerbations in Chronic Obstructive Pulmonary Disease Identification and Prediction Using a Digital Health System J . J Med Internet Res 2017 19 3 e69.

2 Liu S Zhou Y Liu S et al. Association between exposure to ambient particulate matter and chronic obstructive pulmonary disease results from a cross sectional study in China J . Thorax 2017 72 9 788 795.

3 ġ . ɦ Ч ѵ Ч Ά ɛ Ą J . Ψ ╞ ѵ ѵ Ч 2018 41 12 942.

4 Ikeda N Nakajima Y Sho M et al. The association of K ras gene mutation and vascular endothelial growth factor gene expression in pancreatic carcinoma J . Cancer 2015 92 3 488 499.

5 Celli B Decramer M Wedzicha JA et al. An Official American Thoracic Society/European Respiratory Society Statement Research Questions in Chronic Obstructive Pulmonary Disease J . Am J Respir Crit Care Med 2015 191 7 e4 e27.

6 Anthonisen N R. Chronic obstructive pulmonary disease J . Med J Austral 2016 167 5 273 278.

7 Wong EKC Lee PCS Ansary S et al. Role of venous blood gases in hypercapnic respiratory failure chronic obstructive pulmonary disease patients presenting to the emergency department J . Intern Med J 2019 49 7 834 837.

8 Klisic A Kotur Stevuljevic J Kavaric N et al. Relationship between Cystatin C Retinol binding Protein 4 and Framingham Risk Score in Healthy Postmenopausal Women J . Arch Iran Med 2016 19 12 845 851.

9 Zhang M Li Y Yang X et al. Serum Cystatin C as an Inflammatory Marker in Exacerbated and Convalescent COPD Patients J . Inflammat 2016 39 2 625 631.

10 Byers DE. Linking VEGF Deficiency and IL 33 Upregulation in Chronic Obstructive Pulmonary Disease J . Am J Respir Cell Mol Biol 2019 61 5 550 551.

11 ڊ Ω £ ´ . VEGF ɗICAM 1 ɗIL 13 ẇ IL 17 ğ ɐ ʁ و ẇ ´ ʁ و Ψ ẇ τ J . í 2017 22 9 1563 1566.

12 Renáta Marietta Böcskei Lilla Tamási Béla Benczúr et al. Inflammatory markers IL 6 suPAR and arterial stiffness parameters in COPD patients J . Eur Respirat J 2016 48 suppl 60 PA3670.

13 Takemura Y Sasaki M Goto K et al. PT08.3 Proinflammatory Cytokine IL 6 But Not TNF α Affects Energy Metabolism and Nutritional Status in Patients with Lung Cancer J . Clin Nutrit 2016 35 1 S38.

14 Chaker AM Zissler UM Poulos N et al. Activin A Is a Pro Inflammatory Regulator in Type 2 Driven Upper Airway Disease J . Int Arch Allergy Immunol 2018 176 1 15 25.

14 3 3ζ

1 2 2

14 3 3 14 3 3 protein family m ΄Y ˥ ŏ ğ̆
Ĭ ɟ 14 3 3 ᵘ ɔ ζ Ά ę ђ ў ə ה ə
ɟ 14 3 3ζ 14 3 3 ɬ φm ˝H ɔ ğ̆ Ą ΄Y
14 3 3ζ Ά ɟ Ъ ˝H 14 3 3ζ Ά ę Ά † ɞ ה ɞ
Ą ε † w ɞ ɟ
14 3 3ζ †

14-3-3ζ and breast cancer

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ABSTRACT The 14 3 3 protein family is a kind of acidic and highly conserved small molecule pro teins widely exists in eukaryotic cells. The 14 3 3 protein has no obvious catalytic activity and mainly inter acts with other proteins to regulate the target protein. 14 3 3ζ is one of the important members of the 14 3 3 protein family. Recently we found that found that 14 3 3ζ is a novel target for the cancer therapy. In this re view we focus on the current progress on breast cancer resistance recurrence and metastasis and discuss the potential of 14 3 3ζ serviced as an effective therapeutic target for breast cancer in patient whose tumors overexpress 14 3 3ζ.

KEY WOEDS 14 3 3ζprotein Breast cancer

ѽ щ ├ w ẋ ς 14 3 3ζ ε ɞ w ẇ
ĭ ᴩ Ỉ H ΄Y ה ℵ w Ъ ɟ 14 3 3ζ Ά ´ ĭ ę
ɔ ╗ † ɟ Ψ Ὸ ɞ ğ̆ 1 ɟ 14 3 3ζ m
Ỹ ΄Y m מ ˝ ч מ ˝ ŏ ɞ
ה ĕ H ℵ˯ Ψ ğ̆ ə 2 3 ɟ 14 3 3ζ
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E-mail tochenchangjie@163.com

[4] ɟ ŋŏ Ψ Ъ 14 3 3ζ Ά ę Ά † ה Ẇ ɷ ה ɷ Ặ ŏ Ặ ę Ə ε ɷí w Ẇ ɷ [e] ɟ

1 14 3 3ζ

14 3 3ζ ᵐ ˝ ל Ά ה ה ɷ ɷ ė 14 3 3ζ ’ [m] ŏ [5] ɟ ŋŏ Ψ ɳ Hsp 27 14 3 3ζ Ặ Ъ non small cell lung carcinoma NSCLC ˬ ۱ Ύ Hsp 27 ۱ 14 3 3ζ Ў ã̃ Hsp 27 ۱ 14 3 3ζ ˬ ۱ Ὼ [6] ɟ ŋŏ ◓ Ψ ◓ Ψ 14 3 3ζ Ь 14 3 3ζ Ά ◓ TNM ŏ Ẇ ~ Ặ ɳ ’ Ặ ◓ ɷ ɷẆ ו Ỉ ˬ ĕ H [7] ɟ ŋŏ Ặ Ψ 14 3 3ζ ŋŏ Ψ ɳ ŋŏ Ψ ۷ Ύ Ά 14 3 3ζ Ặ [8] ε í w[m] ɟ ŋŏ Ɑ ה Ψ Zhao JF [9] Ъ ASH 1 miR 375 14 3 3ζ ˝ ŋŏ ASH 1 ۱ miR 375 ; 14 3 3ζ ╗ ASH 1 ۱ miR 375 Ə ε Ặ ė 14 3 3ζ ŋŏ Ɑ ה Ψ نح ė Ə ɟ ´ w ɔ ’ w ה 14 3 3ζ Ь ה ’ Ė Ə ŋŏ Ψ ɟ

2 14 3 3ζ

† Ə ε Ψ ה ŋŏ [10] Ψ ה ς ĭ † ė [11] ɟ ˝H 14 3 3ζ ŋŏ † Ψ ɟ 14 3 3ζ ˝ ж Ѧ ה 14 3 3ζ ˝ c ŋŏ † Ə ŋŏ † ה ۱ ς Ặ ɟ

2.1 14 3 3ζ Ά †

14 3 3ζ Ь † ˝ ė ی ŋ ħ Ѧ ŋŏ MCF10A Ψ 14 3 3ζ ה 14 3 3ζ O ج ε 14 3 3ζ † ה ė [12] ɟ Rehman SK [13] ה 14 3 3ζ Ъ MAPK/c Jun מ ˝ Ъ miR 221 ɟ p27 CDKI ; Ύ 14 3 3ζ miR 221 p27 ς ŋŏ † Ψ ה Ə 14 3 3ζ ’ ŋŏ † ה ה Ψ ė Ə ɟ TGF β/Smad מ ˝ ŋŏ Ψ ה א ę Ψ 14 3 3ζ ה Ặ Ə [14] ɟ TGF β ŋŏ ώ ל Ψ Ə ε Ặ ė ж ŋŏ Ψ Ə ε ˬ Ή Xu J [15] Ъ TGF β ; ŏ Smads ה Ξ ˝ ’ ɟ ŋŏ † ɔ ώ ל Ψ 14 3 3ζ ɟ p53 ɳ Ặ Ъ TGF β Ặ ’ ˬ ה א φ 14 3 3ζ ’ ˬ TGF β ɟ 14 3 3ζ ɟ w ɔ 14 3 3ζ ŋŏ ה Ψ Ə ’ γ ε[m] ی ŏ Ь † ɟ μ [m] Y μ ה ŋŏ ה Ặ Ə † ל 14 3 3ζ Ά ė ی نح ė Ύ Ặ ę † A lactate dehydrogenase A LDHA ŋŏ ж † ɔ Ψ 14 3 3ζ ɔ Ъ LDHA ή ɔ ˬ † ה [16] caffolding protein ŋŏ מ ˝ ך ה Ə ï ’ ה نح Suen KM [17] ה ė ی Shc מ ˝ ERK ɔ ɟ ŋŏ ɕ † Triple Negative Breast Cancer Tnbc Ψ shc ɔ ɔ ɟ ά ו ی ۱ ŏ [m] ה Shc ɔ ’ [n] 14 3 3ζ ۱ Pin 1 Akt ۱ ERK מ ˝ ╗ ɟ ’ ו Ỉ 14 3 3ζ ’ ئی † ה ŋŏ Ψ ה Ặ Ə ɟ

2.2 14 3 3ζ Ά †

ŋŏ † Ψ 70% Ь ɔ ו † ε ɟ Ặ Ỉ ŏ ہ Ỉ † Ά

ę Ψ ħ Ə ε Ǐ ŏ m Ė
Ύ ɞɥ ж ğ Ψ
ה [18] ɟ Bergamaschi A [19] ה Ъ
ħ Ė ɔ 14 3 3ζ Ə ė ε
; Ό 14 3 3ζ microRNA 451 ɟ †
Ь miR 451 ; 14 3 3ζ
Ъ SERMs Ǐ ŏ Ӈ Ə ɟ
Liu ZR [20] m ה miR 451a
’ ɷ MCF 7 ۱ LCC 2 ħ
ɟ miR 451a Ά 14 3 3ζ ۷ Ă 14 3 3ζ
ɥ ɷ ĕ H 14 3 3ζ Ά miR 451a ў
Ӈ ħ Ə w 14 3 3ζ
ħ Ė Ă Ə ɟ 14 3 3ζ Ə ε Ǐ
ŏ ė
ɱ ˝ ǐ Ύ ۱ Ǐ
ŏ w ˜ 14 3 3ζ ẇ ę Ǎ
FOXM 1 ğ Ǐ ŏ Ė
ɵ e [21] ɟ ’ 14 3 3ζ Ό ε †
Ъ ɟ
2.3 14 3 3ζ Ά † ה
ε Ъ † ۷
ɞ ɞɔ ɞǐ ŏ
ė ε ˜ ה ƒ
ɟ Ύ ǭ ה Ɑ ė ŏ
Ӈ ɟ ѽ ה 14 3 3ζ ’ †
ה ŏ Ӈ [22] ɟ ğ ה Ψ 14 3 3ζ
ε 70% ~75% Ɑ ה ε
45% [23] ɟ ğ † Ψ 14 3 3ζ ת ė
Ƀ Ά H ŏ ۱ ŏ Ă ˙ Ƀ
ẉ B ɞ 1 ɞCDC25B ۱ birc5 ת
ė Ά † ה Ă [24] ь ת ė
Ъ 14 3 3ζ Ά † ה Ă Ė ל
ɵ e ɟ Li Y

1 . 14 3 3ζ Ά Ą̈
J . 2017 31 6 543 547.

2 ĕ ж ĕ ц Ş ╞ . 14 3 3 zeta Ά ђ
† Ą̈ J . ├ 2017
47 3 192 196.

3 Luo Z Yang X Ma LT et al. 14 3 3zeta Positive Cells Show More Tumorigenic Characters in Human Glioblastoma J . Turk Neur osurgery 2016 26 6 813 817.

4 Hong L Chen W Xing A et al. Inhibition of Tyrosine 3 Monooxygenase / Tryptophan 5 Monooxygenase Activation Protein Zeta YWHAZ Overcomes Drug Resistance and Tu morigenicity in Ovarian Cancer J . Cell Physiol Biochem 2018 49 53 64.

5 Matta A Siu KW. 14 3 3 zeta as novel molecular target for cancer therapy J . Expert Opin Ther Targets 2012 16 515 523.

6 Zhao GY Ding JY Lu CL et al. The overexpression of 14 3 3ζ and Hsp27 promotes non small cell lung cancer progres sion J . Cancer 2014 120 5 652 663.

7 Shi J Ye J Fei H et al. YWHAZ promotes ovarian cancer metastasis by modulating glycolysis J . Oncol Rep 2019 41 1101 1112.

8 л . 14 3 3theta ğ ж Ψ
ʅ í τ J . ц ├ 2015 15 27
5221 5224.

9 Zhao JF Zhao Q Hu H et al. The ASH1 miR 375 YWHAZ Signaling Axis Regulates Tumor Properties in Hepa tocellular Carcinoma J . Mol Ther Nucleic Acids 2018 11 538 553.

10 Slinin Y Greer N Ishani A et al. Timing of dialysis initia tion duration and frequency of hemodialysis sessions and membrane flux a systematic review for a KDOQI clinical practice guideline J . Am J Kidney Dis 2015 66 823 836.

11 Ayers D. Influence of microRNAs and Long Non Coding RNAs in Cancer Chemoresistance J . Genes Basel 2017 8 95.

12 Danes CG Wyszomierski SL Lu J et al. 14 3 3 zeta down regulates p53 in mammary epithelial cells and confers luminal filling J . Cancer Res 2008 68 1760 1767.

13 Rehman SK Li SH Wyszomierski SL et al. 14 3 3ζ or chestrates mammary tumor onset and progression via miR 221 mediated cell proliferation J . Cancer Res 2014 74 363 373.

14 Ten Dijke P. 14 3 3ζ turns TGF β to the dark side J . Can cer Cell 2015 27 151 153.

15 Xu J Acharya S Sahin O et al. 14 3 3ζ turns TGF β s function from tumor suppressor to metastasis promoter in breast cancer by contextual changes of Smad partners from p53 to Gli2 J . Cancer Cell 2015 27 177 192.

16 Morrison CD. Tipping the balance between good and evil ab errant 14 3 3ζ expression drives oncogenic TGF β signaling in metastatic breast cancers J . Breast Cancer Res 2015 17 92.

17 Suen KM Lin CC Seiler C et al. Phosphorylation of threo nine residues on Shc promotes ligand binding and mediates crosstalk between MAPK and Akt x J
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HZ 2019 100

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E-mail 864925019@qq.com

1.1 WNT

WNT ŏ ▌ MB 10% [7] ɟ ۱ φ ה ב 10 [8] ɟ ה ב ה Ό [9] ж Ж Ң Ң Ψ Ύ ۱ [10] ė Ά ę ђ ŏ Ж ~ 5 95% [11] ɟ Turcot ´ Ъ ב ה ה ה Ў ɟ FAP ۱ К HNPCC К Ά FAP Ă ɟ FAP APC ח ė в ל APC ' P WNT ŏ β catenin ė ى WNT/β catenin מ ˝ Ψ ח ė ъ [12] ɟ WNT MB CTNNB1 ח ė 3 Ђ 1 ל SE WNT מ ˝ ŋ ▌ M ћ β T23 ъ MB ɟ Ά APC ל Ă Ж ى Ė ~ [13] ɟ Ж Ψ ɒm Y ל DDX3X ח ė ė ח ė m ' RNA ו ŏ ۱ ۷ [14] ɟ К ɔ 6 ˝ ו ╥ ו Ψ ל ɟ WNT Ƀ Ξ Y Ж ى WNTα 70% ۱ WNTβ 30% WNTα ν ˝H ω З ╥ ו 6 ى ל WNTβ ζ ж ╥ ו 6 ى [15] ɟ

1.2 SHH

SHH ▌ 30% ʒ ۷ א ŏ ζ Ψ ğ 5 w ; ש 16 w ɔ ɟ ~ ' Ά 3 STAT3 Ă [16] ɟ SHH ה Ң ╚ Ж ى Ң [10 17] ɟ ה ‴ ǫ̃ 25% ğ MB Ψ З ~ Ψ 5 ε 75% [11] ɟ SHH ğ Ң SHH מ ˝ מ ˝ Ă W ğ Gorlin ´ Ψ ה З ח ה ה ћ ۱ MBs MBENs [18] ɟ Gorlin ´ ζ PTCH1 ˝Ą ח ė ל ח ė PTC1 SHH ɔ ו ɟ SHH Ά PCT1 ´ Ъ G g ɔ ו ɔ SMO ъ ъ SUFU Ψ GLI ė ɟ GLI ė Ң ۱ ח ė Ƀ З ל Ά ћ ח ė MYCN ɞCCND1 ъ [19] ɟ ė ˝Ą SMO ъ SHH מ ˝ ~ Ė Ъ ' ɟ TP53 ל Ά Li Fraumeni syndrome ´ LFS Ă ל ğ 30% ν SHH MBs Ψ ' ה Ύ Ά ~ Ă [20] ɟ GPR161 ל ς Ά ν SHH MBs Ą [21] ɟ ε ǫ̈ ה U1 snRNA ל ה ğ 5′ ị Ң ´ ˩ ˩ ל ى U1 snRNA ч ị ғ ˝Ą ח ė PTCH1 ח ė GLI2 ۱ CCND2 ל ğ SHH ى MB Ψ ζ Ψ ğ 97% ж SHHδ Ж ى ۱ 25% SHHα Ж ى [22 23] ɟ К ζ ה ى MB ğ Ƀ ו 3q ћ Ά 9q ɞ10q ۱ 14q M ɟ m SHH MB ŏ ε ظ Y Ж ى SHHα Ж ى Ė گ ى غ ج ‴ TP53 ל в 3

Ң

Ὸ MYC ⸗ ~ [15] ɟ

1.4 Group 4

Group 4 MB Ж ▌ ʒ

35% [7] ~ Ψ 5 ε 75% [11] ɟ

ה ה ɕ ʁ ɟ Group 4

Ҷ Ҥ Ψ / ⸗ ' Á Ҥ ɔ

Ⱶ Ψ EOMES ɻ LIM ̓ ġ

1α LMX1A Ă [28] 35%~40% ğ

[24] ɟ

Group 4 Ψ ƾ Ƀ

ת ת ġ KDM6A ƾ ɞ ̓ α

Ў Ə SNCAIP ת ġ é Ậ ɞMYCN

ɻ CDK6 ת ġ ⸗ ɟ Northcott ה PRDM6

4 Ψ ɔ ⸗ ĭ ת ġ Ύ

PRDM6 Ҷ Ҥ SNCAIP ; 600 kb ę ğ SNCAIP

Ậ Group 4 Ψ ╗ [26] ɟ

ɻ ŏ Ъ א

ERBB4 SRC מ ˝ Group 4 [29] ɟ Ӄ

ɔ l 17q ɟ Ɠ Group 4 MB

ς ğ Жیی Group 4α ɻ Group 4γ ğ CDK6

⸗ ɞp l M ẇ ẉ 7q l ⸗ Group

4β ̄ SNCAIP ɻ PRDM6 [30] ɟ

2

ὦ ắ MB ẇ ẉ ~ ɔ

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ɔ ẉ Ъ ɟ ὦ MB

ŏ ε 4 Y ● ҥ >90% ɞ ɕ

ƛ 75%~90% ɞ 50%~75%

ɻ <50% ɟ ҥ

ζ Ƀ WNT ɻ Group 4 11 ˝

l ã 17 ˝ l ã ⸗ ɕ Ƀ

Group3 ẉ Group 4 MB ɞ̋ ¥ MYC

⸗ Group3 ● ζ Ƀ SHH ɞ

¥ MYCN ⸗ SHH ẇ ẉ Group4 MB

● Ƀ Group3 ¥ TP53 ƾ

SHH [31] ɟ ● ŏ Ƀ̌ Ъ ŏ

ε MB ~ ẇ Ъ ƾ ε ẍ

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2.2

ε ã̃ Ύ GTR MB ת

ὦ Ύ م Ъ ɟ

Thompson Ὸ Á ã̃ Ύ NTR GTR

ɟ

Ҥ Group4 MB NTR ╗ Ж

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[m] ɻ GTR ̋ ˊ ὦ ƛ

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2.3

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SMO Ҥ SHH ⸗ ɻ ˬ

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ה ɟ ʒ Robinson Vismo

gates for molecular subgroups of medulloblastoma J . AJNR Am J Neuroradiol 2014 35 1263 1269.

18 Garrè Maria Luisa Cama Armando Bagnasco Francesca et al. Medulloblastoma variants age dependent occurrence and relation to Gorlin syndrome Ľ a new clinical perspective J . Clin Cancer Res 2009 15 2463 2471.

19 Deshpande Ishan Liang Jiahao Hedeen Danielle et al. Smoothened stimulation by membrane sterols drives Hedgehog pathway activity J . Nature 2019 571 284 288.

20 Orr Brent A Clay Michael R Pinto Emilia M et al. An update on the central nervous system manifestations of Li Fraumeni syndrome J . Acta Neuropathol 2020 139 14 689 701.

21 Begemann Matthias Waszak Sebastian M Robinson Giles W et al. GPR161Germline Mutations Predispose to Pediatric Medulloblastoma J . J Clin Oncol 2020 38 1 43 50.

22 Suzuki Hiromichi Kumar Sachin A Shuai Shimin et al. Recurrent noncoding U1 snRNA mutations drive cryptic splicing in SHH medulloblastoma J . Nature 2019 574 707 711.

23 Spliceosomal RNA Mutations May Drive Medulloblastoma and Other Cancers J . Cancer Discov 2019 9 1644.

24 Kool Marcel Korshunov Andrey Remke Marc et al. Molecular subgroups of medulloblastoma an international meta analysis of transcriptome genetic aberrations and clinical data of WNT SHH Group 3 and Group 4 medulloblastomas J . Acta Neuropathol 2012 123 473 484.

25 Rickman David S Schulte Johannes H Eilers Martin The Expanding World of N MYC Driven Tumors J . Cancer Discov 2018 8 150 163.

26 Northcott Paul A Buchhalter Ivo Morrissy A Sorana et al. The whole genome landscape of medulloblastoma subtypes J . Nature 2017 547 311 317.

27 Shih David J H Northcott Paul A Remke Marc et al. Cytogenetic prognostication within medulloblastoma subgroups J . J Clin Oncol 2014 32 886 896.

28 Lin Charles Y Erkek Serap Tong Yiai et al. Active medulloblastoma enhancers reveal subgroup specific cellular origins J . Nature 2016 530 57 62.

29 Forget Antoine Martignetti Loredana Puget Stéphanie et al. Aberrant ERBB4 SRC Signaling as a Hallmark of Group 4 Medulloblastoma Revealed by Integrative Phosphoproteomic Profiling J . Cancer Cell 2018 34 379 395.e7.

30 Cavalli Florence M G Remke Marc Rampasek Ladislav et al. Intertumoral Heterogeneity within Medulloblastoma Subgroups J . Cancer Cell 2017 31 737 754.e6.

31 Ramaswamy Vijay Remke Marc Bouffet Eric et al. Risk stratification of childhood medulloblastoma in the molecular era the current consensus J . Acta Neuropathol 2016 131 821 831.

32 Thompson Eric M Hielscher Thomas Bouffet Eric et al. Prognostic value of medulloblastoma extent of resection after accounting for molecular subgroup a retrospective integrated clinical and molecular analysis J . Lancet Oncol 2016 17 484 495.

33 Al Wassia Rolina K Ghassal Noor M Naga Adly et al. Optimization of Craniospinal Irradiation for Pediatric Medulloblastoma Using VMAT and IMRT J . J Pediatr Hematol Oncol 2015 37 e405 11.

34 Kahalley Lisa S Peterson Rachel Ris M Douglas et al. Superior Intellectual Outcomes After Proton Radiotherapy Compared With Photon Radiotherapy for Pediatric Medulloblastoma J . J Clin Oncol 2020 38 5 454 461.

35 Das Manjulika Intelligence outcomes after proton versus photon therapy J . Lancet Oncol 2020 38 5 454 461.

36 Neve Anuja Migliavacca Jessica Capdeville Charles et al. Crosstalk between SHH and FGFR Signaling Pathways Controls Tissue Invasion in Medulloblastoma J . Cancers Basel 2019 11 pii:E1985.doi:10.3391cancers11121985.

37 Robinson Giles W Orr Brent A Wu Gang et al. Vismodegib Exerts Targeted Efficacy Against Recurrent Sonic Hedgehog Subgroup Medulloblastoma Results From Phase II Pediatric Brain Tumor Consortium Studies PBTC 025B and PBTC 032 J . J Clin Oncol 2015 33 2646 2654.

38 Goranci Buzhala Gladiola Gabriel Elke Mariappan Arul jothi et al. Losers of Primary Cilia Gain the Benefit of Survival J . Cancer Discov 2017 7 1374 1375.

39 Zhao Xuesong Pak Ekaterina Ornell Kimberly J et al. A Transposon Screen Identifies Loss of Primary Cilia as a Mechanism of Resistance to SMO Inhibitors J . Cancer Discov 2017 7 1436 1449.

40 Eckerdt Frank Clymer Jessica Bell Jonathan B et al. Pharmacological mTOR targeting enhances the antineoplastic effects of selective PI3Kα inhibition in medulloblastoma J . Sci Rep 2019 9 12822.

41 Altshuler C Haley K Dhall G et al. Decreased morbidity and mortality of autologous hematopoietic transplants for children with malignant central nervous system tumors the Head Start Ł trials 1991 2009 J . Bone Marrow Transplant 2016 51 945 948.

42 Koo Jane Silverman Stacy Nuechterlein Brandon et al. Safety and feasibility of outpatient autologous stem cell transplantation in pediatric patients with primary central nervous system tumors J . Bone Marrow Transplant 2019

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