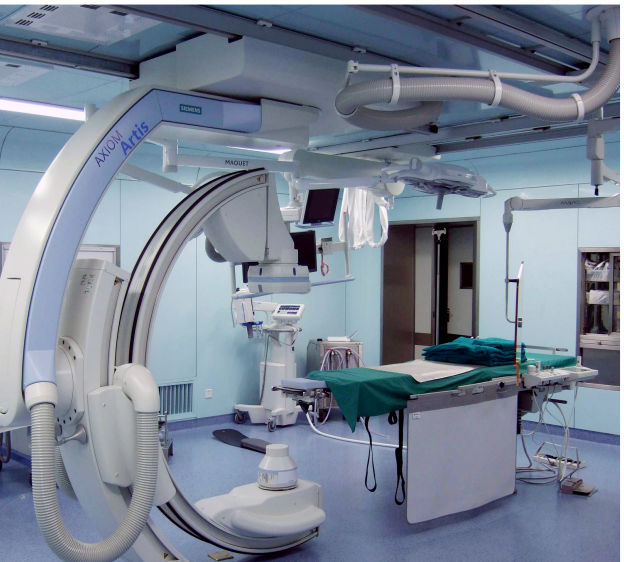

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Original Articles

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ORIGINAL ARTICLE

Study on the Risk of Metabolic Syndrome Based on UA/Cr Analysis

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Abstract: To explore the epidemiological trend of the relationship between serum uric acid/creatinine ratio(UA/Cr) and metabolic syndrome (MS) in middle-aged and old people in Wuhan, Hubei Province. The study used the method of cluster sampling, In 2016, 6570 residents over 45 years old in Wuhan City, Hubei Province were investigated with standardized questionnaire, physical examination and biochemical examination. MS is defined according to the standard of the International Diabetes Union. According to the quartile grouping of UA/Cr, the regression analysis of risk metabolism indexes between UA / Cr and MS was carried out. Analyze the correlation between UA / Cr and MS to determine whether UA / Cr can be an independent risk factor of MS.6414 subjects were included in this study including 3313 MS patients (52.7%). Blood CR level is 77(70~87) mmol/L,Blood UA level is 314(267~372) mmol/L,UA/Cr level is 4.01(3.46~4.65). The study population was divided into four groups according to the UA / Cr quartile.Group 1 UA/Cr <1.0, Group 2 1.0≤UA/Cr<1.5,Group 3 1.5≤UA/Cr<2.0,Group 4 UA/Cr≥2.0. From the first group to the fourth group, with the increase of UA / Cr level, the body mass index (BMI), waist circumference, blood pressure, triacylglycerol, low-density lipoprotein cholesterol, total cholesterol, C-reactive protein and insulin resistance increased gradually ($P < 0.01$). The prevalence of MS and its components also increased significantly ($P < 0.01$).Conclusion:There was an independent positive correlation between UA / Cr and MS in the middle-aged and old people in the community, UA / Cr can be used as early biomarker of MS. It provides a new scientific basis for the early detection of MS, the intervention of high-risk population and the reversal of cardiovascular disease.

Keywords: Ratio of Serum Uric Acid/Creatinine; Metabolic Syndrome; Middle Aged and Old People

1. Introduction

Metabolic syndrome (MS) is a clinical syndrome in which multiple metabolic abnormalities accumulate in the same individual, including abnormal glucose regulation, abdominal obesity, hypertension, lipid metabolism disorder, etc. The common influence of heredity and environmental factors on its pathogenesis.

There are many risk factors defining MS, but they can't explain all cardiovascular events. Therefore, it is suggested that other risk factors such as inflammatory biomarkers, microalbumin, hyperuricemia should be included in the definition of MS. Previous studies have found that elevated serum uric acid and creatinine can increase the risk of MS, hypertension and cardiovascular disease. Gersch *et al* found that increased blood uric acid increased the risk of MS by 1.6 times. During Norvik *et al* 7-year follow-up, he found that the increase of serum uric acid was also significantly related to MS. At the same time, the study also found that serum creatinine was significantly related to MS, hypertension, cardiovascular disease and obesity. Renal function affects the correlation between serum uric acid, MS and its components, because uric acid is mainly removed by urine, the impairment of renal

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function is closely related to the decrease of glomerular filtration rate, the increase of serum creatinine level and the increase of serum uric acid level. At the same time, the increase of serum uric acid can reflect the change of renal function and is an independent predictor of MS and cardiovascular events.The standardized blood uric acid of renal function, such as UA / Cr, reflects the net output of uric acid. It may be a better biomarker to predict MS and related diseases.

The purpose of this study is to understand the UA / Cr level and MS prevalence of residents over 45 years old in Wuhan, Hubei Province The relationship between UA / Cr and MS and its components was further explored, which provides new ideas for early detection of MS high-risk groups and prevention of MS and related diseases, it provides clues for the formulation of health strategy as well.

2. Research objects and methods

From May 2017 to August 2018, 6570 permanent residents over 45 years old who participated in the survey of diabetes and other chronic diseases in Wuhan City, Hubei Province in 2016 were investigated with standardized questionnaire, physical examination, biochemical test, etc. After the elimination of 156 patients with loss of serum uric acid, creatinine, MS and other indicators, 6414 subjects were finally included in the statistical analysis. All subjects in this study signed written informed consent.

In this paper, we use five research methods: medical history record, physical examination, blood examination, MS diagnosis and statistical treatment.

Information was collected one by one according to the order of international standardized questionnaire, including demographic data, smoking and drinking history, physical activity level, eating habits, etc. Current smoking or current drinking is defined as regular smoking or drinking behavior within the first 6 months of the survey. The level of physical activity was calculated by international physical activity questionnaire. All investigators are strictly and uniformly trained.

All subjects received routine physical examination, including height, weight, waist circumference and resting blood pressure. When measuring the waist circumference, the subjects stood vertically, and when they exhaled calmly, they were measured around the umbilicus, with an accuracy of 0.1cm.

Height measurement is accurate to 0.1cm, weight measurement is accurate to 0.1kg, body mass index (BMI) = weight / height 2 (kg / m2).After sitting for at least 10 minutes, the subjects took their non dominant arms and measured their blood pressure three times with Omron model hem-752fuzzy (OMRON company). The interval of each time was at least 1 min. The average value of three times was taken for analysis.

In the morning, the fasting venous blood (fasting for at least 10 hours) was collected and the serum triglyceride (TG), total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C) and high-density lipoprotein cholesterol (H) were detected by Beckman coulterau5800 DL-C). Serum uric acid was measured by enzymatic method, creatinine was measured by picric acid method, fasting insulin was measured by Electrochemiluminescence Method (rochecobas e 601 electrochemiluminescence analyzer), fasting blood glucose was measured by hexose excitation method, insulin resistance level was assessed by homeostasis model assessment of insulin resistance (HOMA-IR), HOMA-IR = fasting pancreas Island element (mIU / L × fasting blood glucose (mmol / L) / 22.5.

SAS 9.3 statistical software was used for data analysis. All the quantitative data of normal distribution are expressed by X ± s; the quantitative data of non normal distribution are expressed by median, quartile range m (p25-p75), and statistical analysis is conducted after logarithmic transformation; the qualitative data are expressed by number of people (composition ratio). The subjects were divided into the first group, the second group, the third group and the fourth group according to the UA / Cr quartile. One way ANOVA and χ 2 test were used to compare the variables of continuous normal distribution.

3. Result analysis

(1) Basic information of the object

This study included 6414 subjects, including 3313 (52.7%) of MS patients, 1032 (43.9%) of male patients and 2281 (56.1%) of female patients, 77 (70-87) mmol / L of Cr, 314 (267-372) mmol / L of UA and 4.01

(3.46-4.65) of UA / CR. According to the UA / Cr quartile, the study population was divided into four groups: group 1, UA / Cr < 1.0; group 2, 1.0 ≤ UA / Cr < 1.5; group 3, 1.5 ≤ UA / Cr < 2.0; and group 4, UA / Cr ≥ 2.0. The results showed that the BMI, waist circumference, systolic blood pressure, diastolic blood pressure, insulin resistance, TG, LDL-C, TC, and C-reactive protein levels increased gradually with the increase of UA / Cr (P < 0.01); the risk of MS, hypertension, hyperglycemia, low HDL-C, high Tg and central obesity also increased significantly (P < 0.01) . 01); HDL-C level showed a downward trend (P < 0.01) (**Table 1**).

Parameter	Group 1	Group 2	Group 3	Group 4	P
Number	1 603	1 604	1 604	1 603	/
Age (years)	62.6±9.2	62.2±8.7	62.2±8.6	62.1±8.6	0.2300
BMI(kg/m2)	23.9±3.5	24.6±3.3	25.2±3.4	26.0±3.6	<0.0001
Waist(cm)	81.1±10.2	82.6±10.1	84.3±9.6	86.5±10.3	<0.0001
Systolic pressure(mmHg)	133.9±18.1	139.9±17.7	135.0±16.5	136.2±16.8	0.0003
Diastolic pressure(mmHg)	75.6±9.7	75.8±9.7	76.7±9.3	77.1±9.6	<0.0001
Fasting blood glucose(mmol/L)	6.21±1.71	6.10±1.43	6.08±1.37	6.17±1.33	0.0400
Insulin resistance index	1.60(1.10~2.40)	1.74(1.21~2.58)	1.93(1.32~2.81)	2.32(1.57~3.43)	<0.0001
TG(mmol/L)	1.27(0.96~1.76)	1.44(1.08~1.96)	1.55 1.14~2.16)	1.87(1.31~2.69)	<0.0001
LDL-C(mmol/L)	3.51±0.79	3.60±0.76	3.60±0.77	3.69±0.84	<0.0001
HDL-C(mmol/L)	1.39±0.33	1.35±0.30	1.32±0.30	1.29±0.28	<0.0001
TC(mmol/L)	5.17±0.99	5.25±0.95	5.27±0.98	5.41±1.12	<0.0001
C reactive protein(mg/L)	0.19(0.14~0.28)	0.21(0.16~0.30)	0.23(0.17~0.34)	0.26(0.19~0.40)	<0.0001
Dietary factors (Edible frequency×Food consumption)	32.3±17.6	33.3±19.6	32.6±16.8	32.5±16.5	0.4500
MS[n(%)]	624(38.9)	744(46.4)	876(54.1)	1069(66.7)	<0.0001
Hypertension [n(%)]	1058(66.0)	1082(67.5)	1171(73.0)	1228(76.6)	<0.0001
Hypertriglyceridemia [n(%)]	452(28.2)	579(36.1)	688(42.9)	927(57.8)	<0.0001
Low and high density lipoprotein [n(%)]	432(27.0)	457(28.5)	587(36.6)	648(40.4)	<0.0001
Hyperglycemia [n(%)]	938(58.5)	951(59.3)	954(59.5)	1061(66.2)	<0.0001
Central obesity [n(%)]	622(38.8)	725(45.2)	881(54.9)	993(62.0)	<0.0001
Physical activity(MET-h/wk)	16.8(3.0~21.0)	15.0(4.5~21.0)	18.0(4.5~21.0)	15.0(3.0~21.0)	0.2200
Smoking at present [n(%)]	314(19.6)	321(20.0)	300(18.7)	297(18.5)	0.6700
Drinking at present [n(%)]	181(11.3)	212(13.2)	221(13.8)	292(18.2)	<0.0001

Table 1. Basic characteristics of population grouped by the quartile of UA / Cr ratio

(2) Regression analysis of risk factors and metabolic indexes of UA / Cr and MS

After adjusting for age, gender, current smoking, current drinking, physical activity and diet factors, multiple regression analysis showed that UA/Cr was positively correlated with BMI, waist circumference, systolic blood pressure, diastolic blood pressure, TG, TC, LDL-C, C-reactive protein and insulin resistance (P < 0.01); UA/Cr was most significantly correlated with waist circumference and systolic blood pressure (β ± se was 2.15 ± 0.15; 1.17 ± 0.27, respectively) , P < 0.01); UA / Cr and HDL-C levels were significantly negatively correlated (P < 0.01); there was no correlation between UA / Cr and fasting blood glucose (P > 0.05) (**Table 2**).

Parameter	β±SE	P
Waist(cm)	2.15±0.15	<0.0001
BMI(kg/m^2)	0.82±0.05	<0.0001
Systolic Pressure(mmHg)	1.17±0.27	<0.0001
Diastolic Pressure(mmHg)	0.71±0.14	<0.0001
Fasting Blood Glucose(mmol/L)	-0.006±0.02	0.7900
Insulin Resistance Index	0.06±0.004	<0.0001
TG①(mmol/L)	0.06±0.003	<0.0001
HDL-C(mmol/L)	-0.04±0.004	<0.0001
LDL-C(mmol/L)	0.05±0.01	<0.0001
TC(mmol/L)	0.08±0.02	<0.0001
C-reactive protein①(mg/L)	0.05±0.004	<0.0001

Note: ① adjusted for age, gender, current smoking and drinking, diet and physical activity

Table 2. Correlation Analysis of UA / Cr ratio with MS risk factors and metabolic indexes

In addition, UA / Cr was used as a continuous variable and adjusted for age, gender, BMI, current smoking, current drinking, physical activity, eating habits and C-reactive protein. It was found that UA / Cr was significantly related to MS, hypertension, high Tg, low HDL-C, insulin resistance and central obesity ($P \leq 0.01$) (**Figure 1**); and it was most related to high Tg The or and 95% CI were 1.51 (1.41-1.62).

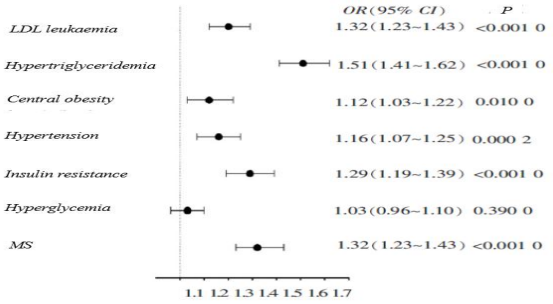

Figure 1. Correlation between UA / Cr ratio and MS.

4. Conclusion

Among the elderly in Wuhan, Hubei Province, with the increase of UA / Cr level, BMI, waist circumference, systolic blood pressure, diastolic blood pressure, insulin resistance, TG, LDL-C, TC, and C-reactive protein levels increased gradually. The risk of MS, hypertension, hyperglycemia, low HDL-C, high Tg and central obesity also increased significantly.

UA/Cr ratio is a good biomarker for predicting chronic kidney disease, and it is better than UA in blood. Al daghri *et al* confirmed that the UA/Cr value of type 2 diabetic patients was related to their MS and components. The results of this study show that UA/Cr is significantly correlated with high Tg and low HDLC, which is consistent with the conclusions of foreign studies.

UA/Cr is significantly correlated with high Tg and low HDLC, which is consistent with the conclusions of existing studies. Possible explanation for the relationship between UA/Cr and hypertriglyceridemia: at the same time, TG synthesis promotes the de novo synthesis of phosphoribosylpyrophosphate-5 through the common metabolic pathway, thus increasing the production of UA. There is a negative correlation between UA/Cr and HDL-C. the possible reason is that low HDL-C level is significantly related to insulin resistance, and insulin increases serum UA concentration by reducing UA excretion and then resistance.

Among the middle-aged and old people in Wuhan City, Hubei Province, Ms shows a high prevalence. UA/Cr value is positively correlated with MS and its components. UA/Cr value has important clinical value for early detection of MS high-risk population,

prevention of chronic kidney disease and cardiovascular disease. At the same time, to understand the correlation between UA/Cr and MS is helpful to provide strategies for early prevention of diseases, and to provide ideas for the formulation of health strategies.

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ORIGINAL ARTICLE

Discussion on Application of Nursing Risk Management in Physical Examination Center

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Abstract: Objective: to explore whether the application of nursing risk management in physical examination center has positive significance; Method: 50 patients who received medical examination from December 1st to 31st, 2019 were randomly divided into two groups according to the number of the medical examination card, 25 patients in Group A were given routine nursing management, which will be referred as the control group hereafter while group B with 25 people will have the nursing risk management, which will be referred as the observation group. After all the physical examination items ended, statistical physical examination results and the degree of satisfaction of the physical examination will be recorded. Results: Errors of the observation group in the physical examination process were significantly less than that of the control group ($P<0.05$) and the degree of satisfaction of physical examinees in the observation group was higher than that in the control group($P<0.05$). Conclusion: The use of nursing risk management in medical examination center can improve the degree of satisfaction of medical examiners and reduce the occurrence of accidents and disputes.

Keywords: Nursing Risk Management; Physical Examination Center; Applied Research

Introduction

Nowadays, more and more people begin to pay attention to their own health problems. The concept of prevention before disease and cure before disease is more and more popular. In this case, the quality and frequency of physical examination of people from all walks of life have significantly improved. All the major general hospitals have set up a professional medical examination center. In addition, there are specialized medical institutions, although they greatly meet people's needs for medical examination, there are still problems exposing the lack of professional health care management, compared to professional medical institutions.

1. Materials and methods

1.1 General materials

In this study, 50 people who received medical examination in the medical examination center were randomly divided into two groups, 25 in each group with observation group and control group. In the observation group, there were 10 males and 15 females, the age range was from 20 to 71 years old, the average age range was 43 years old, 5 students with below junior middle school education, 8 students with education background from junior middle school to bachelor's degree, and 12 students with bachelor's degree or above. In the control group, there were 6 males and 19 females, the age range was 22 to 68 years, the average age was 43.3 to 4.8 years. Education: 7 people below junior high school, 9 people

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with education background from junior middle school to bachelor's degree, 9 people with bachelor's degree or above.

1.2 Method

Routine nursing methods were used in the control group and nursing risk management was used in the observation group:

(1) Improve the risk management mechanism

The risk management mechanism mainly includes the establishment of risk management related rules and regulations, the supervision of relevant operations in the medical examination process, the summary and feedback of accidents and errors, and the establishment of a risk management team with some leader who is responsible for the improvement of risk management mechanism and management to ensure the smooth implementation of the mechanism.

(2) Risk education

Providing risk education to relevant staff, raising the awareness of risk prevention and crisis among staff in relevant positions, enhancing staff's vigilance and sense of responsibility, and incorporating the attendance and assessment results of training into career assessment to ensure that the staff have a higher professional ethics and to explain the relevant professional practices.

(3) Optimizing the environment of physical examination and improving the process of physical examination

There are some problems in the environment of physical examination which may affect the service experience of the physical examination, or cause unnecessary infection and affect the health of the examinees. Therefore, the staff needs to continuously optimize and improve the process and environment of medical examination to ensure that patients are physically and mentally happy and the efficiency of medical examination is at a higher level.

(4) Improving the professional level of nursing staff

The professional level of nursing staff determines the frequency of mistakes and lapses in the process of carrying out medical examination and nursing. Medical institutions need to constantly purify the nursing staff, improve their comprehensive level and quality, and enhance their professionalism and professional ethics, which can fundamentally improve the effectiveness of nursing care and enhance the satisfaction rate of the medical examination center.

(5) Improving the identification and supporting facilities of the physical examination center

Physical examination center should set up the humanized and obvious prompt slogans to make it convenient for examinees to carry on the physical examination according to the flow. In addition, the physical examination center should also set up comfortable seats, water dispensers, garbage collection places and other supporting facilities to enhance the physical examination experience.

1.3 Evaluation index

(1) Nursing error rate

When errors occur during the physical examination, including but not limited to disputes, omissions, accidents, etc. , they are recorded as a nursing error. Nursing error rate= nursing error rate / number of examiners in the group X100%.

(2) Degree of satisfaction

Degree of satisfaction is obtained by means of a questionnaire. After completing all the physical examination contents, the examinees fill in the satisfaction questionnaire. The questionnaire was designed with three evaluation levels: (1) very satisfied, basically satisfied and satisfied. The results that were very satisfied, basically satisfied will be recorded as satisfaction. Degree of satisfaction = number of persons with satisfaction / total number of persons in the group X 100% .

1.4 Statistical method

SPSS18.0 was used for statistical analysis.

2. Results

The nursing error rates of the two groups were analyzed and the results were as follows **Table 1**.

The results of the survey on the satisfaction of the two groups are as follows: **Table 2**

Group	Number	Error number	Nursing error rate
Observation group	25	1	4%
control group	25	7	28%

Table 1. Statistical table of nursing error rate

Group	Number	Satisfactory number	Satisfaction degree
Observation group	25	23	92%
control group	25	16	64%

Table 2. Investigation on the satisfaction degree of two groups of physical examination

3. Discussion

The nursing risk management of examinees can obviously reduce the probability of various accidents in the process of the medical examination, and greatly reduce the disputes in the medical examination. In addition, the survey of satisfaction also confirms the point of view mentioned above. Moreover, the higher degree of satisfaction of medical examiners can, to a certain extent, enhance the popularity and public praise of the medical examination center, form brand benefits, and increase the benefits of the medical examination center for creating a more authoritative image. Therefore, the application of nursing risk management in physical examination center is of positive significance and should be widely promoted and applied.

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ORIGINAL ARTICLE

Analysis of Risk Factors of Sarcopenia in the Elderly and Nursing Measures of Traditional Chinese Medicine

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Abstract: Sarcopenia is also known as skeletal muscular dystrophy, which has a great relationship with aging. The core symptoms are further reduction of skeletal muscle mass and significant decline of strength. As the name implies, sarcopenia mainly occurs in the elderly, which often has a huge negative impact on the health of older people. Therefore, this paper makes an in-depth study of the cases of actual senile sarcopenia, so as to better analyze the risk factors of patients with such diseases and how to carry out effective TCM nursing.

Keywords: Senile Sarcopenia; Risk Factors; Nursing of Traditional Chinese Medicine

China has stepped into the aging society and many problems are exposed. Especially in terms of medical treatment, the incidence and number of senile sarcopenia in China are also increasing year by year. It is because when the person arrives at old age stage and each body function can decay gradually, at the same time because of a variety of chronic diseases, body function damage caused by the mobility inconvenience will further accelerate the decline in muscle mass. A large number of studies have shown that muscle content is an important factor in the mortality of the elderly, and the elderly with relatively low muscle content tend to have a doubling risk of death. So the present stage, all walks of life shows great concern on the elderly sarcopenia treatment and nursing.

1. Analysis of risk factors in elderly patients with sarcopenia

This paper conducted an in-depth study on the clinical data of senile sarcopenia patients in a hospital within one year, and conducted an effective group study on the confirmed senile sarcopenia patients according to the international standard diagnostic specifications. The rest were either unrecognized or divided into control groups to better understand the risk factors associated with sarcopenia in elderly patients.

1.1 The method of parsing is introduced

In this paper, the analysis of the risk factors of senile sarcopenia patients was carried out by combining literature review and relevant medical staff practice to further determine the risk factors leading to the occurrence of this disease in senile sarcopenia patients. These include age, gender, physical condition, daily exercise, and other chronic conditions. The diagnosis was based on the latest international criteria for sarcopenia. In the overall data sample statistical process, SPSS 22.0 statistical analysis software was fully applied to analyze the risk factors related to elderly patients with sarcopenia, and the analysis of the overall risk factors was given a more scientific statistical concept.

1.2 Presentation of survey results

Among all hospitalized elderly patients with sarcopenia treated in a hospital in this survey, the overall average age is about 75 years old, among which the number of female cases is slightly higher than that of

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male cases while the overall number of patients in the survey is only about 20% of patients have been truly diagnosed with sarcopenia.

1.3 Introduction to the risk factors of elderly patients with sarcopenia

First of all, age is a factor. According to the relevant standard test analysis, sarcopenia has a great correlation with the age of patients. Therefore, the overall test data can be concluded that the concept of sarcopenia will increase significantly as patients get older.

Then there is the physical condition, which is analyzed from the patient's gender, physical condition, daily exercise, other chronic diseases and other conditions. Finally, it is concluded that osteoporosis is the positive core risk factor for muscle loss in elderly patients, as shown in **Table 1** below.

Group	Number of cases	Gender		Nutritional status			Experience exercise		Osteoporosis	
		Male	Female sex	good	commonly	Poor	YES	NO	YES	NO
Case group	68	26	42	20	35	13	8	60	45	23
Control group	244	130	114	134	105	5	165	79	120	124

Table 1. Single factor analysis of sarcopenia in the elderly

Through the application, relevant variables without statistical application were gradually selected and removed, and the overall results were as follows: age, gender, physical health status, and exercise status were the important risk factors for the occurrence of sarcopenia in elderly patients in this survey. As shown in **Table 2** below.

Risk factors	β	Sx	P	OR（95%CI）
Age	4.106	0.042	<0.01	2.867
Gender	2.654	2.043	0.030	1.645
Nutritional status	2.332	1.151	0.021	0.021
Physical exercise	2.297	1.137	0.044	0.044

Table 2. Multivariate analysis of sarcopenia in the elderly

2. Analysis of nursing measures of Chinese medicine for aged patients with sarcopenia

2.1 Increase overall physical activity as possible as appropriate

Too little exercise is one of the core factors of sarcopenia in the elderly. From the perspective of traditional Chinese medicine, it plays a very important role in promoting the prevention of sarcopenia in the elderly through reasonable guidance of scientific and comprehensive functional exercise. For the elderly patients with sarcopenia, the intervention mode is mainly to carry out relatively mild exercise as the core, or carry out light aerobic exercise. Scientific training can not only improve the symptoms of sarcopenia in elderly patients, but also play a key role in the improvement of patients with diabetes.

2.2 The symptoms are relieved by tonic soup

Experts in the field of traditional Chinese medicine believe that such as Sishen decoction has the effect of tonifying the spleen and stomach and can also play a very important role in removing phlegm and dampness. For the elderly patients with sarcopenia, it is a very targeted herbal diet. The main ingredients of Sishen soup include: ling 20 grams, owe 20 grams, lotus seeds

40 grams, yam 20 grams, salt (right amount), rice wine (right amount). The method of manufacture is: the related medicinal materials are pre-soaked and conditioned for 30 minutes. Then the relevant material is put into water and rice wine is added to boil for about an hour.

2.3 Functional exercise and impact of comprehensive interventions

What needs to be noted here is that reasonable key functional exercise and adequate nutrition intake can be carried out in a synchronous manner, which can often play a very significant therapeutic effect. The combination of diet and exercise is very conducive to the overall prevention and control of sarcopenia in the elderly. On the basis of scientific diet and exercise, further increasing the intake of whey protein can further improve the overall physical quality of elderly patients with sarcopenia and other relevant indicators. And related studies have further proved that comprehensively deepening the comprehensive development of nutrition intake and exercise training can further improve the physical function and basic motor ability of elderly patients with sarcopenia, thus effectively achieving the goal of further improving the overall quality of life of elderly patients with sarcopenia.

3. Conclusion

With the further aggravation of the aging of the global population, the health problems of the elderly group have attracted wide attention from all walks of life. Sarcopenia in the elderly is a common disease whose generation will bring great negative impact on the normal life of the elderly. For now, the overall understanding of sarcopenia in the elderly is still in its infancy with no immediate treatment or even a highly standardized diagnosis. Therefore, relevant medical staff need to further comprehensively explore sarcopenia in the elderly, and provide better and scientific guidance for the health of patients with sarcopenia and the prevention of sarcopenia in the elderly.

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ORIGINAL ARTICLE

Application of Strengthening Detail Management in Intensive-Care Unit Nursing Management

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Abstract: As the core work of the hospital, the intensive care unit (ICU) has gathered many of the most cutting-edge facilities and related medical staff. ICU is the core application way to treat high-risk patients, which often contains the deep hope of patients and their families. Therefore, it is critical to further improve the quality of care management and control in the intensive-care unit. The use of in-depth detail controls is critical to the daily care of patients in intensive-care unit, so it's worth exploring further.

Keywords: Detail Management; Intensive-Care Unit; Nursing Management

The intensive-care unit is a modern, cutting edge approach to health care that has been accompanied by the further comprehensive development of the health care profession, the creation of new medical facilities and the innovation of hospital management and control systems. The related staff of the ICU need to further improve how to effectively control the related nursing work of the ICU. The management and control of details are a brand-new form of management and control that have been gradually formed in recent years. It can better excavate the root of the problems in nursing care, and pay more attention to the detailed services in nursing care, which plays an important role in improving the quality of nursing. This paper will carry on the comprehensive comb to have the in-depth analysis, combined with the situation of strengthening the details of management and control of the specific situation in a hospital intensive care unit.

1. Relevant information and methods of implementation

1.1 Collection of relevant information

The main data collected for a hospital within a year of nearly 170 patients admitted to the ICU to explore the core target group, specific target group information as shown in **Table 1** below

The patients were divided into control group and observation group according to the time of admission. Each group includes 100 members with similar overall profile

Sex of patients		**Overall proportion of patients' diseases**		
Male	Female sex	AECOPD	ARDS	Severe asthma
108	62	45%	33%	22%

Table 1. Target group information

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1.2 Introduction to care

The control group consisted mainly of routine care in the intensive-care unit, that is, primary care and crisis care which included holistic testing, patient monitoring, and diet control. The observation group may work on the basis of the overall strengthening of the details of the control group with specific strengthening of the following areas: First, the development of a targeted system related to nursing management and control. The core of detail management is to use the process as a benchmark to better manage and control nursing care. The relevant care management staff and a cadre of medical staff should work on the basis of all the engineering processes used by the intensive-care unit and related systems to further reproduce the working system and the corresponding nursing procedures throughout the intensive-care unit, including all links of the day-today nursing system, the rules of nursing control, specialized nursing process, emergency response process, etc. The second is to explore the hidden dangers of the relevant details of the source. Collecting relevant information comprehensively, further deepening and summarizing the problems existing in nursing, and further analyzing the hidden trouble problems existing in the examination of nursing work in hospitals, sorting out and comprehensively developing the detailed origin of the hidden trouble in nursing are priorities. For example, patients in intensive-care unit who have pressure sores from long periods of bed rest need to be fully attended, especially health care workers have to control their skin. At the same time, the hospital should draw up the corresponding detailed control plan to the most common hidden trouble, and draw up a book to carry out the whole training in the cycle in the system, so that the relevant medical staff can completely grasp; Third, to further improve the quality of nursing work. Every week is the cycle for the hospital to carry out the examination and assessment. At the same time, hospitals also need to fully train new medical staff to be proficient in the use of conventional medical facilities, and fully encourage the relevant medical staff to further upgrade their professional standards; Fourth, the overall details of the rescue facilities control. The health care workers involved need to ensure that the rescue facility is available in real time. The damaged or missing related facilities should be repaired and supplemented in a timely manner. The rescue facilities also need regular maintenance, and the daily handover work should also be done properly. Fifth, fully improve the overall environment of the ward. Relevant medical staff should keep the ward clean and quiet at all times, and effectively protect the privacy of patients. Relevant medical staff should not engage in too many private activities, so as to better ensure the stability of the ward environment. The nursing control department of the hospital needs to carry out regular tests to further evaluate key indicators such as nursing control quality and patient satisfaction in ICU.

2. Results of the overall development of the application

The scores of nursing management quality, the scores of nursing document writing quality, the qualified rate of basic nursing quality and the satisfaction of patients in the observation group were significantly better than those in the control group. Overall differentiated data are shown in **Table 2** below.

Group	Number of cases	Nursing management score	Nursing document score	Qualified basic care	Patient satisfaction
Observation group	100	98.6± 1.3	98.9± 1.2	98（98.0）	99（99.0）
Control group	100	93.6± 1.3	92.1± 1.1	91（91.0）	91（91.0）
U/x2,p	P	27.20,<0.01	41.77,<0.01	4.71,<0.05	27.20,<0.01

Table 2. Comparison of nursing quality between the two groups

3. Analysis of the results of the overall development of the application

Through practical application, we find that the effective deep communication between doctors and patients in ICU nursing management can further improve the effect of treatment, which mainly includes: first, deep verbal communication. Health care workers can give lucid patients a comprehensive overview of the intensive-care unit environment, as well as a detailed description of the overall condition and specific treatment options, in particular, for some patients who may have infectious problems should be explained by why their relatives can't accompany around, so as to maximize the patient's support and understanding; Secondly, non-verbal communication. For patients who have difficulty speaking, we can communicate with them deeply by means of gesture, so as to understand their needs in the first time. There are also professional studies that show that the basic sleep quality of patients plays an important role in the recovery of patients with intensive care unit. Therefore, it is also required that relevant nursing staff should make full efforts to arrange medical resources reasonably when the basic conditions permit so as to provide more adequate rest time for patients.

4. Conclusion

The guarantee for the further deepening of the detailed management and control in the intensive-care unit lies in the deep implementation of the relevant rules and regulations and safety management and control, further enhancing the safety awareness of nursing staff, and enhancing the overall professional standard. Through the actual investigation of the data results of this article, conclusion can be clearly drawn that all indicators of nursing management of the observation group with further deepening the details is significantly better than that of the control group. This shows that enhanced detail control can not only effectively improve the standard of medical treatment in the ICU, but also further improve the professional standards of nursing staff in an all-round way. Therefore, comprehensive management of details in the intensive-care unit is critical to improve the standard of care in hospitals at this stage.

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ORIGINAL ARTICLE

Research on the Diagnosis of Tumor Based on CT and MRI

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Abstract: With the accelerating pace of life, the incidence rate of cancer has increased year by year, which has seriously affected the health of patients. Early diagnosis of tumor is difficult, and it is easy to relapse and metastasis after operation, so it is urgent to improve the diagnosis effect. In this paper, CT and MRI, which are commonly used in tumor diagnosis, are selected for analysis and comparison in order to improve the diagnosis effect. Based on this, this paper first introduces the data and methods of tumor diagnosis, then analyses the results of CT and MRI diagnosis, and finally studies and analyses the value of tumor diagnosis based on CT and MRI technology.

Keywords: CT and MRI; Diagnosis of Tumor

1. Introduction

Tumor is a kind of multiple diseases. It is very important for patients' quality of life to detect tumor as early as possible and treat it in time. In general, we can identify benign and malignant tumors by taking living specimens for pathological examination, or by CT and MRI examination. The latter two are the main ways to diagnose tumors, and can diagnose the disease process in a short time and formulate targeted treatment plans. As an efficient staging and postoperative evaluation tool, CT is mainly used for tumor diagnosis; further staging diagnosis and evaluation of treatment effect to determine the nature of space occupying lesions. As a common imaging method for preoperative diagnosis of tumor, MRI is often used to identify tissue contrast with its super-high resolution, and has a high accuracy in the diagnosis of space occupying lesions. CT and MRI are used to locate the tumor area, so as to evaluate the diagnostic value of MRI, CT and their combination, which is helpful to improve the detection status of tumor. Therefore, the study of tumor diagnosis based on CT and MRI technology has important practical value.

2. Data and methods of tumor diagnosis

2.1 General information of diagnosis

Fifty patients with tumor were selected as the study object, aged 25-60 years, with an average age of 42.5 years. All patients were confirmed as tumor patients by operation or pathological examination, and agreed with the study. All patients were examined by operation or laparoscopy, and CT and MRI of lower abdomen were performed.

2.2 Diagnostic method

In this paper, we use Siemens CT equipment and Philips MRI to scan all patients' lower abdomen with MRI and CT. We use techniques such as breath compensation and flow compensation, upper and lower pre saturation to reduce the artifacts caused by breath movement and blood flow. The abdomen of patients was scanned in three phases: plain scan, thin-layer enhanced scan, action pulse phase, vein phase and delay phase. The

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scanning range was from the renal portal plane to the lower edge of pubic symphysis. The volume data was transmitted to the image reconstruction workstation. In the image reconstruction workstation, multi MPR, CPR, MIP or VR reconstruction is performed. Among them, MPR reconstruction technology selects the best position for better display of blood vessels, including sagittal, coronal or oblique sagittal reconstruction, mainly including three positions as shown in **Figure 1** below. CPR was used to observe the relationship between the vessels and the lesions in axial images.

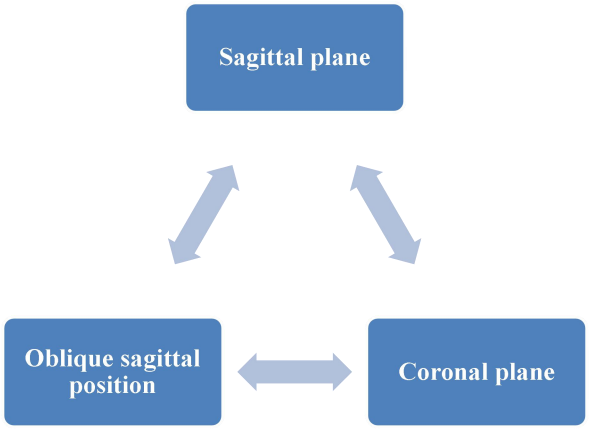

Figure 1. MPR reconstruction technology display positions.

2.3 Observation index of tumor diagnosis

First of all, it needs to compare the accuracy, sensitivity and specificity of two different methods in the diagnosis of ovarian tumors, and study the performance, localization and qualitative of the two methods in the imaging of ovarian tumors. Secondly, it is necessary to compare the accuracy, sensitivity and specificity, as well as the influence on performance, location and qualitative. Through the statistical analysis and calculation of several situations as shown in **Figure 2** below, the accuracy, sensitivity and specificity of the statistical analysis can be achieved. SPSS software was used to analyze the data. The data were expressed in % and χ_2 test was used. $P<0.05$ means the difference is statistically significant.

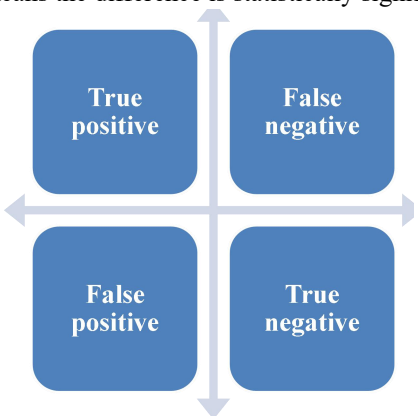

Figure 2. Several situations of statistical analysis and calculation.

3. Diagnostic results

3.1 Accuracy of CT and MRI in clinical diagnosis of tumor

Among the 50 cases confirmed by pathology, 43 cases were confirmed by CT, 3 cases were missed, 4 cases were unclear, and the accuracy rate was 86%. MRI showed 50 cases of definite diagnosis, 2 cases of missed diagnosis, 1 case of unclear display, and the accuracy rate was 94%. There was a significant difference in the accuracy of CT and MRI (χ_2=3.97153, $P<0.05$). The accuracy, sensitivity and specificity of CT and MRI in the diagnosis of ovarian tumors are shown in **Table 1**.

	Number of cases	True positive	False negative	False positive	True negative	Accuracy	Susceptibility	Specificity
CT	50	42	2	2	1	86%	90.5%	87.2%
MRI	50	46	2	1	1	94%	93.5%	91.4%
P	/					<0.05	>0.05	>0.05

Table 1. The accuracy, sensitivity and specificity of CT and MRI

3.2 The clinical value of CT and MRI in the diagnosis of tumor

All of the subjects were confirmed by pathology in 50 cases. 13 cases were misdiagnosed by CT, the accuracy of qualitative diagnosis was 82.5%; and 5 cases were misdiagnosed by MRI, the accuracy of qualitative diagnosis was 91.3%. The accuracy of the two methods is statistically different. It can be seen that MRI is superior to CT in the qualitative diagnosis of tumors. The sensitivity and specificity of MRI were slightly higher than that of SCT, similar to that of SCT. In addition, MRI can accurately display the specific location and qualitative of the tumor. The two methods complement and confirm each other, which can improve the detection

rate and diagnosis accuracy.

3.3. CT and MRI findings

Through the CT study of benign tumor, we can find that the cystic wall of benign tumor is obviously different from the adjacent tissue, and it is more complete. In addition, after the onset of benign tumors, there is no enhancement of the cystic wall, or the enhancement is not obvious. Through the study of MRI manifestations of benign tumors, we can find that benign tumors will appear calcification or signal phenomenon, and can accurately diagnose the abnormal changes in the capsule. For benign tumor mass, the cyst wall or relatively smooth patients can be noted benign after diagnosis.

Through the study of CT image of malignant tumor, we can find that the mass is thick, and its interior is solid. Some patients with serious malignant tumor will have necrosis, and others will show up in the form of cauliflower, and separate the thickness of the tumor. Through the study of MRI manifestations of malignant tumors, it can be found that there are differences in the internal enhancement degree of malignant tumors, which will have a great impact on nearby organs, and lead to ascites in the abdominal cavity, as well as the abnormal increase of lymph nodes, as well as the spread of tumor tissue.

4. Analysis of tumor diagnosis results based on CT and MRI

In recent years, the incidence rate of cancer has increased year by year, and the mortality rate is higher, which seriously affects the life and health of patients. The main reason of high mortality of tumor is that its early diagnosis is difficult, and it is easy to relapse and metastasis after operation. In the process of treatment, tumor not only depends on pathological biopsy, but also needs to be diagnosed by CT and MRI. With the development of imaging and laboratory diagnostics, as an important means of tumor diagnosis, the accuracy of CT and MRI diagnosis is gradually improving.

As a method of tumor diagnosis with quick results and simple operation, CT examination can make a more accurate judgment of tumor conditions. However, there are some problems in the process of CT examination, such as cross-sectional images, and X-ray scanning cannot accurately distinguish the tumor. MRI diagnosis method relies on its high spatial resolution, clear display image and other characteristics, not only can accurately locate the tumor location and its internal structure, but also can generate clear images, accurately diagnose the patient's condition, and show the distribution of soft tissue. For example, MRI can diagnose whether there is cystic change, whether there is a change in thickness, and the size of the tumor's impact on nearby organs. Therefore, MRI diagnosis method has better diagnostic accuracy with its more sensitive diagnostic effect, and its location and qualitative has more obvious advantages.

In addition, clinical research found that MRI not only has a good resolution of soft tissue, but also can accurately distinguish the ultrastructure. It can effectively diagnose the small tumor focus, which is conducive to the early and comprehensive diagnosis of the tumor, which shows that MRI has a good effect on the nature and staging of the tumor. CT cannot detect small lesions, but it is easy to miss small lesions, and it is difficult to show the complex internal structure, so it is easy to misdiagnose the tumor. However, the high resolution of CT plays an important role in the diagnosis of metastasis, invasion and stage of advanced cancer. Therefore, CT plays an important role in the diagnosis of tumor.

In summary, both CT and MRI have clear diagnostic value in tumor diagnosis, and both of them have their own advantages and disadvantages. Therefore, when necessary, we can carry out the joint diagnosis of CT and MRI to make up for each other's diagnostic defects, so as to further improve the diagnostic accuracy.

5. Conclusions

With the accelerating pace of life, the incidence rate of cancer has increased year by year, which has seriously affected the health of patients. The early diagnosis of tumor is difficult, and it is easy to relapse and metastasis after operation, which leads to a high mortality. CT and MRI are often used to diagnose the tumor as a highly effective staging and postoperative evaluation tool. Through the analysis of the accuracy of CT and MRI in the clinical diagnosis of tumor and the clinical value of both, it is found that both CT and MRI have a clear diagnostic value in the diagnosis of tumor, but MRI

is better than CT, and its sensitivity and specificity are higher, and also has a great advantage in the process of positioning and qualitative. In addition, the two methods have their own advantages and disadvantages, so it is necessary to carry out the joint diagnosis of CT and MRI to further improve the diagnosis effect.

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Journal Introduction

Advanced Emergency Medicine is an international, open access, peer-reviewed journal, which publishes information relevant to the practice, educational advancements, and investigation of emergency medicine. The journal aims to advance the science, education, and clinical practice of emergency medicine, to serve as a voice for the academic emergency medicine community, and help physicians and medical personnel improve patient care by providing the opportunity to access and learn about the most current research in emergency medicine. AEM contains research papers and clinical studies as well as articles focusing on the training of emergency physicians and on the practice of emergency medicine.

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