Factors of preoperative septic shock associated with urolithiasis: an analysis and nursing progress

Li Shenzhen, Lan Yujie, Tang Chao, Xian Hongyi, Lin Xianping

The Second Affiliated Hospital of Guangxi Medical University, Nanning Guangxi 530007, China

【**Abstract**】The so-called urinary stones, which result in lumpy or granular aggregates after concentration and precipitation of urine, as a more common type of disease in urology, will occur in any part of the urethra ureter, bladder, and kidney, but mainly ureteral stones as well as kidney stones are more common in the clinic. There is considerable variation in the symptoms exhibited by stones presenting at different sites, which are mainly clinical, such as pain, frequency, clouding of the urine color, and low back pain, and in severe cases may contain sand stones or blood in the urine. In the accelerated pace of people's daily life along with the change of dietary habits at the present stage, leading to the incidence of such diseases shows a yearly increasing trend, and more commonly found in the South as well as in the male population of young adults, the age of patients is mostly at the age of 20-40 years. Other than that, the associated complications of this condition are more difficult to manage clinically, so adequate awareness as well as great attention has to be paid to urinary calculi because it has a high recurrence rate and may lead to urinary obstruction, produce damage and. The patient's renal pelvis, under the influence of the stones, places them on increased pressure, and the refluxing bacteria can invade the blood to cause septic shock to occur, causing severe damage to renal function. According to the related survey research shows that urinary stones now cannot be radical, for which caregivers strengthen nursing intervention in clinical treatment, patients must actively cooperate with the development of nursing work to bed rest, thereby reducing the probability of related complications and effectively improving the quality of daily life. This article discusses in detail the factors that contribute to the development of preoperative concomitant septic shock in urolithiasis as well as nursing interventions, which are reported below.

【**Key words**】Urinary stones;Septic shock;Factor analysis;Nursing interventions

Preface:

At present, the improvement of people's daily life quality and the irregularity of their daily living habits, together with the environmental pollution generated in the economic development, have brought more adverse effects on people, resulting in urinary stones becoming one of the important threats to people's life and health. There are many factors contributing to the formation of stones, which are closely related to epidemiology, abnormalities in the anatomical structure of urine and urinary tract infection[1]. The disease can be divided into primary urolithiasis, secondary or infectious urolithiasis and metabolic urolithiasis according to the pathogenesis. If the clinical treatment is not carried out in time, it may lead to more serious complications, such as septic shock or severe sepsis. Because of the rising mortality and incidence rate of such diseases in recent

years, people have also shown a high degree of attention.

1 Analysis of the factors associated with septic shock before operation of urinary calculi

Infectious shock is also called septic shock, which refers to the syndrome of sepsis accompanied by shock caused by microorganisms and related toxin products. The incidence rate of this disease in clinical practice is as high as 4. 7%. As one of the more serious complications of urinary calculi, if it cannot be treated and controlled in time, it is easy to cause death[2]. According to relevant research results, [3]the probability of septic shock in patients with urinary calculi is significantly higher than that reported in relevant literature. Systemic inflammatory reaction syndrome (SIRS)will occur in patients with septic shock during urine culture at the middle stage before operation, and then the related symptoms of septic shock will occur. For patients without systemic inflammatory reaction syndrome after surgery, the positive rate in urine culture before surgery was 10. 7%, and for patients with systemic inflammatory reaction syndrome after surgery, the positive rate in urine culture before surgery was 66. 5%. Therefore, one of the important factors for septic shock is bacterial culture. The occurrence of septic shock is closely related to the positive result in urine culture, and at the same time, it is also related to the amount of bleeding in patients during operation, whether the drainage tube remains unobstructed after operation, and the length of operation time. Relevant research data show that[4], the probability of pathogenic factors of stones related to infectious shock in the treatment process is about 1.13%, and the highest mortality rate can reach 81%. Therefore, we should strengthen the relevant preventive measures of urinary system stones in preoperative infectious shock, early diagnosis and take corresponding intervention measures.

2 Clinical manifestations of urinary calculi and preoperative septic shock

2.1 Clinical manifestation of urinary calculus

In clinical practice, urinary calculi mainly show severe waist pain, and the onset time is relatively sudden, accompanied by pus and blood or hematuria. The pain may radiate along the ureter to the iliac fossa, scrotum and perineum. At the same time, it may also be accompanied by symptoms such as interruption of urine flow or difficulty in urination, which will cause great harm to the daily life and physical and mental health of patients.

2.2 Clinical manifestations of septic shock

In clinical practice, a few patients show warm shock, but most patients are conscious and will have symptoms such as anxiety, nervousness and irritability. In addition, it is accompanied by mild cyanosis of lips and nail bed, pale complexion and skin, cold and wet limbs, significantly faster heart rate, decreased urine volume, low blood pressure and other clinical symptoms. In the late stage of shock, it may lead to the failure of important visceral organs, and the more common ones are intractable hypotension and extensive bleeding of skin, viscera, mucosa, lumen, etc. [5]. For example, acute cardiac insufficiency, brain dysfunction, acute renal failure and acute pulmonary failure are all caused by the failure of important tissues and organs caused by septic shock[6]. It can be seen from this that both urinary stones and their associated complications will cause great pain to patients. Therefore, it is of great significance to strengthen the body's self-protection in daily life to effectively avoid the occurrence of related diseases.

3 Emergency treatment and nursing methods of urinary calculi and preoperative infectious shock in clinic

3. 1 Nursing evaluation and basic prevention

Because of the acute onset of urinary system stones accompanied by infectious shock, the harm is greater, and the concealment is relatively strong. Therefore, after admission, patients should strictly monitor their vital signs, check their blood routine, evaluate their blood pressure and body temperature, monitor their skin, mucous membrane and urine volume every 4 hours, and at the same time, carry out bedside procalcitonin test, blood urine culture and complete set of biochemical electrolyte coagulation and other tests to timely feed back their risk assessment results, and take basic preventive measures[7].

3. 2 Treatment of anti-infective shock

After admission, the relevant nursing staff should check the liver and kidney function of the patient, carry out routine monitoring of blood and urine, and select broad-spectrum antibiotics based on their retention for bedside procalcitonin test, and select vasoactive drugs or rehydration in the process of anti-shock, which should be carried out through central venous catheterization[8]. Carry out urine culture and drug sensitivity tests, strictly check the vital signs of patients, and pay attention to whether there is deterioration. Relevant nursing staff carried out blood picture etiological examination for patients, monitored their urine routine and renal function, and carried out blood biochemical examination of acid-base balance, serum enzyme determination and serum electrolyte determination, so as to ensure that all examination indicators of patients meet the range of relevant indicators[9].

3. 3 Nursing of acute respiratory distress syndrome

The onset of acute respiratory distress syndrome is relatively acute, and the PaO2 in the patient's body will fluctuate greatly and decrease within 3-5 hours of admission. The patient shows sweating, dying, purple and cyanotic lips and faces, and the breath sounds of both lungs will be scattered in the wheezing sounds. After the symptoms of hypoxia, there will be no significant change after using the mask for high concentration oxygen inhalation. At this time, the ventilator with endotracheal intubation should be immediately selected to assist breathing[10]. The blood gas analysis of patients should be strictly monitored, and the electrolyte imbalance and acid-base imbalance in the body should be corrected in time to control the incidence of infection. At the same time, timely supplement high protein, high calorie and high nutrient substances to make patients adapt to the state of high metabolism.

3. 4 Nursing of sepsis with hypotension

Before using antibiotics for treatment, at least two blood samples and urine samples should be selected for urine culture. If the patient has symptoms related to sepsis, double-channel fluid replacement should be carried out immediately. A deep vein catheter was placed under the patient's clavicle to timely monitor the central venous pressure and adjust the infusion speed[11]. The amount of dopamine should be adjusted according to the blood pressure level. After the blood pressure level remains stable, the amount of dopamine can be reduced or withdrawn directly.

3. 5 Nursing of multiple organ failure

When urolithiasis is accompanied by infectious shock stress, patients may have a series of reactions such as immune state, nervous system and endocrine system. Long-term or more intense stress state will lead to the depletion of potential or the impairment of the body's adaptive ability, leading to the waterfall effect, and ultimately lead to the failure of multiple organ function and even death of patients[12]. During blood gas analysis, the blood coagulation time of electrolyte is dynamically monitored, the drug use is adjusted in time, and the acid-base and water-electrolyte imbalance are adjusted. At the same time, cardiotonic drugs should be used to maintain the respiratory function and renal function of patients. Medical staff should also pay attention to the prevention and treatment of brain edema, acute respiratory distress syndrome and other auxiliary treatment[13].

3. 6 Strengthen the prevention and intervention of stones

With the development of social economy, people's daily living standards are constantly improving, leading to the rising probability of stones. However, as long as we pay more attention and take corresponding measures in daily life, we can effectively avoid the occurrence of infectious shock[14]. There are two ways to prevent stones. First, life prevention. The main formation factor of urolithiasis is the infection of urinary system, which is closely related to the prevention and treatment of urolithiasis. At the same time, for patients who take traditional Chinese medicine for a long time, they should take sea gold sand and Lysimachia christinae for soaking in water at intervals to promote the excretion of small stones in the body. If conditions permit, patients can seek TCM doctors to open TCM prescriptions according to their specific conditions[15]. In addition, drinking more water and exercising more can effectively prevent the occurrence of stones. Drinking more water can promote the excretion of minerals and salts from the body. Cultivating good living habits in daily life is also a manifestation of responsibility for personal health. The second is diet prevention. There is a certain relationship between the occurrence of stones and the diet structure. Reasonable adjustment of the daily diet structure can effectively prevent the occurrence of stones. In daily life, people should eat more high-fiber foods. Because the composition of urinary stones is quite different, the diet conditioning programs are also different[16-17]. For example, the stone is calcium oxalate. Patients should try to avoid eating foods with high calcium oxalate in daily life, such as tomatoes, strawberries, spinach, etc;If the stone is uric acid, eat a low purine diet;Eat more meat for infection;If the stone is phosphoric acid, eat more foods with low calcium and low phosphorus[18-19]]. In medicine, patients with kidney stones should eat as little salt and animal protein as possible, drink more water in daily life, and keep the urine volume at 2000-3000ml, which can not only prevent the secondary recurrence of kidney stones, but also ensure the intake of calcium. Therefore, develop good habits in life and diet, take corresponding preventive and intervention measures, effectively reduce the probability of urinary stones and reduce the occurrence of infectious shock[20].

Conclusion:

To sum up, in clinical practice, the incidence rate of infectious shock associated with urinary calculi before surgery is relatively high, and there is a high mortality rate. Therefore, people develop good habits in daily life to effectively avoid the emergence of diseases. At the same time, hospitals should improve the relevant

treatment system, strengthen the monitoring of patients'vital signs, assess the risk of disease related complications, and take corresponding preventive and intervention measures, Timely control the patients with abnormal physical signs to reduce the physical and mental pain of the patients and effectively avoid the damage to the body.

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泌尿系结石术前伴感染性休克的因素分析及护理研究进展

李胜珍，蓝玉洁，唐超，咸虹伊，林贤萍

广西医科大学第二附属医院，广西南宁 530007

【摘要】所谓的泌尿结石就是在经过尿液的浓缩以及沉淀后所导致块状或者是颗粒状的聚集物产生，作为泌尿外科中较为常见的疾病类型，会发病于尿道输尿管、膀胱以及肾等任意部位，但是临床中主要以输尿管结石以及肾结石较为常见。结石出现在不同的部位所表现出的症状有着较大差异，其中主要以尿痛、尿频、尿液的颜色浑浊以及腰痛等为临床表现，严重时尿液中可能含有砂石或者是血。在随现阶段人们日常生活节奏的加快以及饮食习惯出现变化，导致此类疾病的发病率呈现出逐年上升的趋势，并且较常见于南方以及青壮年的男性群体中，患者的年龄大多处于 20-40 岁。此病有着较高的复发率，且可能导致尿路梗阻，产生损伤等情况，与此同时感染发生后常常伴随结石，除此之外，此病的相关并发症在临床治疗中较难，因此对于泌尿系结石要有足够的认识以及重视程度。患者的肾盂在受到结石影响下，使其压力增加，回流的细菌会入侵血液致使感染性休克发生，对肾功能产生严重损害。依据相关的调查研究显示，泌尿系结石现目前并不能进行根治，对此护理人员在临床治疗中加强护理干预，患者要积极配合护理工作的开展来卧床休养，从而降低相关并发症的发生概率，有效提高日常生活质量.

本文通过对泌尿系结石术前伴随感染性休克的发生因素以及护理干预措施做以详细讨论，现将内容如下报告。

【关键词】泌尿系结石；感染性休克；因素分析；护理干预

前言：

现阶段人们日常生活质量改进以及日常生活习惯出现不规律等，加之随着经济发展中产生的环境污染对于人们带来较多不良影响，致使泌尿系结石成为危害人们生命健康重要的威胁之一。结石的形成因素较多，其中与流行病学、尿液解剖结构发生异常以及尿路感染等有着密切关系[1]。此病依据发病因素可将其分为原发性尿石、继发性或感染性尿石以及代谢性尿石。如果在临床治疗中不及时开展治疗，可能导致较为严重的并发症出现，比如感染性休克或者是严重的脓毒症，此类疾病因近年中的死亡率以及发病率不断升高，人们对此也有表现出较高的重视程度。

1 分析泌尿系结石术前伴感染性休克的因素

感染性休克也将其称之为脓毒性休克，就是指微生物以及相关的毒素产物所导致脓毒病的综合症伴随休克。此病在临床中的发病率高达 4. 7%，作为泌尿系结石较为严重的并发症状之一，如果不能及时对其做以治疗及控制，很容易导致患者发生死亡[2]。依据有关的研究结果显示[3]，泌尿系结石患者发生感染性休克概率明显高于相关的文献资料报道。感染性休克患者在进行术前中段的尿培养中会发生全身炎症反应综合症，随后会发生感染性休克的相关病症。在术后并没有出现全身炎症反应综合症的患者，在术前进行尿的培养中显示阳性率为 10. 7%，术后出现全身炎症反应综合症患者在术前进行尿培养中显示阳性率为 66. 5%，因此发生感染性休克的重要因素之一就是细菌培养。感染性休克的出现与尿培养过程中呈现阳性有着密切关系，与此同时，与术中患者的出血量以及术后引流管是否保持通畅，手术时间的长短等均有着一定的关系。有相关的研究资料显示[4]，感染性休克有关的结石在治疗过程中的致病因素发生概率大约为 1.13%，其死亡率最高可以达到 81%，因此要加强泌尿系结石在术前感染性休克的相关预防措施，早期进行诊断并采取相应的干预措施。

2 泌尿系结石及术前伴感染性休克在临床中的表现

2.1 泌尿系结石临床表现

在临床中泌尿系结石主要表现出较为剧烈的腰部疼痛，且发病时间较为突然，伴随脓血或者是血尿出现，疼痛可能会沿着输尿管向髂窝、阴囊以及会阴等处进行放射，与此同时，可能还会伴随尿流的中断或者是排尿困难等症状，对患者的日常生活以及身心健康均带来较大伤害。

2.2 感染性休克临床表现

在临床中少数患者表现出暖休克，但是大多数患者神志清醒，会出现焦虑、神情紧张、烦躁等症状。除此之外，还伴随口唇以及甲床出现轻度的发绀，面色及皮肤发白，肢端出现发冷发湿，心率有着较为明显地增快，并且尿量出现减少，患者血压偏低等临床症状。在休克晚期可能致使重要的脏器官功能出现衰竭，较常出现的有顽固性的低血压以及皮肤、内脏、粘膜、腔道等广泛出血[5]。比如急性的心功能不全、脑功能障碍、急性肾衰竭以及急性肺功能衰竭等，均是因为感染性休克所导致重要组织器官出现衰竭[6]。由此可以看出，不管是泌尿系结石还是与其相关的并发症状对患者将会带来较大的痛苦，因此在日常生活中加强机体的自我防范，对有效避免相关疾病的出现有着重要意义。

3 泌尿系结石及术前伴感染性休克在临床中的急救及护理方法

3. 1 护理评估及基础预防

因泌尿系结石伴随感染性休克的发病时间较急，危害较大，并且隐蔽性相对较强。因此患者在入院后要严格对其各项生命体征的监测，对血常规做以检查，评估患者的血压以及体温状态，对其皮肤黏膜以及尿量等情况每 4 小时做以监测，与此同时进行留取行床旁降钙素原检测、血尿培养以及生化电解质凝血全套等检查及时将其风险评估结果进行反馈，并做好基础的预防干预措施[7]。

3. 2 抗感染性休克的治疗

入院后相关的护理工作人员要对患者肝肾功能做以检查，进行血尿常规的监测，对抗感染的措施依据其留取行床旁降钙素原检测来进行广谱抗生素的选用，在抗休克的过程中选择血管活性药物或者是补液，要通过中心静脉置管来开展[8]。开展尿培养以及药敏的实验，对患者各项生命体征情况做以严格检查，重视是否出现恶化的现象。相关护理工作人员对于患者进行血象病原学的检查，对其尿常规以及肾功能等做以监测，开展酸碱平衡的血液生化检验、血清酶测定以及血清电解质测定等，保证患者各项检查指标符合相关指标的范围[9]。

3. 3 急性呼吸窘迫综合征护理

急性呼吸窘迫综合征发病较急，患者体内的 PaO2 在入院 3-5 小时会有较大波动并且出现下降，患者表现出大汗淋漓、濒死状、唇脸发紫发绀，双肺的呼吸音会在哮鸣音粗散，出现缺氧症状后利用面罩进行高浓度吸氧后没有较大改变，此时，要立即选择气管插管的呼吸机来做以辅助呼吸[10]。对患者血气分析做严格监测，体内出现的电解质失衡以及酸碱失衡等情况及时做以纠正，控制感染的发生程度。与此同时及时进行高蛋白、高热量以及高营养物质的补充，来使患者适应高代谢的状态。

3. 4 脓毒症低血压护理

在采用抗生素做以治疗前，要至少选择两处的血液标本以及尿液标本来做以尿培养，如果患者发生脓毒症的相关症状，立即进行双道补液。在患者的锁骨下做以深静脉置管，及时监测其中心静脉压并进行输液速度的调整[11]。多巴胺的入量要依据血压水平来做以调节，在血压水平保持稳定后，可以减少或者是直接撤离多巴胺的入量。

3. 5 多器官功能衰竭护理

泌尿系结石伴随感染性休克应激时，患者可能会发生免疫状态以及神经系统、内分泌系统等一系列的反应，长期或者较激烈的应激状态，会致使潜能耗尽或者是机体的适应能力发生损伤，从而导致瀑布效应出现，最终致使患者的多器官功能发生衰竭甚至于死亡[12]。在进行血气分析时对电解质的凝血时间做以动态监测，及时进行药物使用情况的调整，对于酸碱以及水电解质失衡等情况做以调节。与此同时，还要进行强心药物的使用，对患者的呼吸功能以及肾功能做以基本维护，医护人员还要重视脑水肿的预防治疗、急性呼吸窘迫综合征及其他方面的辅助治疗工作[13]。

3. 6 加强结石的预防干预

在随社会经济的发展，人们日常的生活水平不断提高，导致结石的发生概率也在升高，但是只要在日常生活中加强注意并做以相应的预防，可以有效避免感染性休克的出现[14]。对于进行结石预防可以从两方面出发，首先是生活预防。尿石主要的形成因素是泌尿系统发生感染，此与尿石症的防治有着较大关系。与此同时，对于长期进行中药服用患者来讲，每间隔一段时间采用海金沙以及金钱草来进行泡水

口服，通过此来促进体内细小结石的排出。在条件容许的情况下，患者可以寻找中医师来根据个人的具体状况进行中药处方的开设[15]。除此之外，多喝水、多进行运动，都可以有效预防结石的出现，多喝水可以促进机体矿物质以及盐类的排出。在日常生活中养成良好的生活习惯，也是对个人健康负责的一种表现。其次是饮食预防。结石出现与饮食结构有着一定关系，合理进行日常饮食结构的调整，可以有效预防结石的发生，在日常生活中要多食用高纤维的食物，因尿结石的成分有着较大差异，因此进行饮食调理的方案也有所差异[16-17]。比如结石为草酸钙，患者在日常生活中尽量少食用含草酸钙较高的食物，比如西红柿、草莓、菠菜等；结石为尿酸要多食用低嘌呤的饮食；结石为感染要多食用肉类食物；结石为磷酸要多食用低钙且低磷的食物[18-19]。医学中认为肾结石患者要尽量少食用盐以及动物性的蛋白质，日常生活中多喝水，并将尿量保持在 2000-3000ml，这样不仅可以预防肾结石的二次复发，还可以确保钙的摄入量。因此在生活以及饮食中养成良好的习惯，做好相应的预防干预措施，有效降低泌尿系结石的发生概率同时，减少感染性休克的出现[20]。

结束语：

综上所述，临床中泌尿系结石术前伴随感染性休克的发病率相对较高，并且有着较高的死亡率，因此人们在日常生活中养成良好的习惯来有效避免疾病的出现，与此同时医院要完善相关的治疗体系，加强对患者生命体征指标的监测，对疾病有关并发症的发生风险做以评估，采取相应的预防干预措施，对出现体征异常的患者及时做以控制，减轻患者身心痛苦，从而有效避免对机体产生的损伤。

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