



Research Article

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## Infection prevention and control measures of risk assessment in hemodialysis patients in hospital

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### ABSTRACT

*This paper aims to reduce nursing risk in the process of hemodialysis which provides hemodialysis patients with secure superior nursing service. Methods are based on the knowledge of risk management guidance, by identifying the dialysis process existing and potential nursing risks, to guide the clinical care and reduce the risk and ensure the safety of nursing care. Results of this paper are reduction of the nursing defect and Improving the dialysis patient satisfaction with nursing work. In conclusion, in the risk management of hemodialysis, strengthening nurses' risk awareness and ability and enhancing the sense of responsibility are the keys of risk management. Improving the service quality is the basic guarantee.*

**Keywords:** Risk Management; Hemodialysis Process; Risk Assessment ; Transport

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### INTRODUCTION

Risk assessment identifies and evaluates to the potential risks that may have harm to patients, staff, visitors to take the right actions . The aim is to those who would cause potential risk factors for the injury, then take proper measures, so as to establish a plan to reduce the frequency and intensity of these incidents and injuries. Hemodialysis is a professional strong special treatment with large risk. Hemodialysis patients are mostly with end-stage renal failure, complications, physical failure, thus increasing the risk in the process of dialysis.

#### 2. Influence of Hemodialysis on Patients

Hemodialysis is an important means of renal replacement therapy. At present, there are 800000 people around the world who rely on dialysis in uremic patients to maintenance of life. In the author's hospital, nephrology department has severe illness, changes rapidly with frequent transport characteristics in dialysis patients, which often accompanies by complications. These patients need fully dialysis treatment in the ward and dialysis center of the transfer process, in addition to critically ill patients who are not suitable for transporting. Those patients need bedside dialysis, and patients having self-care ability most choose hemodialysis center dialysis treatment.

#### 2.1 Risk assessment and Countermeasures in hemodialysis patients during transport

Dialysis quality fully patients generally for three times each week. The number of patients in ward and dialysis return will increase. the data shows that the hospital transfer can increase the complications incidence of the transport patients, which the mortality is 9.6% in usual. In view of this special situation, there are 400 cases of renal dialysis patients out risk analysis, and put forward the corresponding countermeasures.

The results are used X2 test to statistical analysis. When  $P < 0.05$ , it had significant difference.

Table 1. patient safety transfer effect comparison before and after the evaluation sheet

group	number	oxygen lacking levels	%	loss of consciousness	%	Fall accident	%	The venous drainage	%	complaints	%
A	200	15	7.5	5	2.5	4	2	35	17.5	46	23
B	200	6	3	0	0	0	0	11	5.5	14	7

Application of patients safety transport evaluation effect can be seen as follow: in the process of transferring the patients, the adverse reaction of B group is greatly reduced; the in consciousness and fall accidents have obvious respectively from 2.5%, 2% reduced to 0. In fact, this standard is feasible in clinical application.

## 2.2 Application of risk management in the process of dialysis results

From April of 2008 to April of 2013, the author's department was used the application of risk management in the dialysis process, which achieved satisfactory effect, the report was as followed.

The department is equipped with 9 nurses: the number of nurse practitioners is 4 and 5 nurses. The amount of blood purification machine is 26 sets, wherein the hemodialysis machine 2 sets, 24 sets of hemodialysis machine. Workday of every week is 6 days, and more than 700 patients are dialysis one month, 9000 cases one year.

## 3 risk assessment and risk management strategy

### 3.1 assessment method and risk factors

By viewing the professional books and literature data, the causes of nursing safety accidents were found during hemodialysis; department nurses discussion were organized; nursing safety incident investigation patients had a previous or potential unsafe factors.

4 aspects of nursing risk events mainly occurred in our department during hemodialysis. (1) nursing care: Such observation was not timely; internal fistula punctures site bleeding, not timely treatment caused massive blood loss, which was resulted by inadequate water; dialysis records were not written standard. (2) dialysis machine operation. Not skilled machines are used; water machine set off after dehydration; heparin value settings heparin clip is not open which is caused by agglutination of dialyzes and pipeline. (3) nursing accident. Such as arteriovenous puncture needles heeding, arm movement caused by puncture needle prick blood vessel formation of subcutaneous hematoma. (4) emergency mishandling, such as water supply, power outages; membrane rupture, sudden heart failure and hypo tension.

Risk event causes include human factors and system factors. Human factors mainly include: the risk consciousness and the anti risk ability of nurses are not strong. They are not a solid foundation of knowledge training which lack of experience, such as dialysis machine operation technology is not perfect, responsibility heart is not strong. In addition, not compliance behavior of patients also constitutes the main risk factors of nursing, for instance, dialysis interval does not pay attention to the control of water intake causes that water retention is overmuch and dialysis the injection of insulin that day. System factors mainly include: management mechanism is not perfect. The work system, work flow, rescue plans and monitoring system are not well.

### 3.2 risk management strategy

The rules and regulations need to be formulate and perfect to strengthen the risk ability: The hospital should strengthen the standard management, do the rule-based work and avoid empiricist. The author formulates the hemodialysis room check system, namely the self-examination, that is to say, 2 people check and patients self-check; blood dialysis machine filter and machine operation process; dialysis records in writing content; then the author checks on the risk plan such as, rupture of membrane treatment plan, emergency rescue plan for heart failure, acute complications during hemodialysis treatment plan, sudden blackout or short of water supply treatment plan; the hemodialysis room disease observation content has been improved: (1) The observation time is not more than 1 h at interval. (2) To observe the dialysis machine operation, each parameter value dialysis machine is record. (3) Then the author observes fistula puncture, catheterization center and records blood oozing.

At last, what should focus on patient symptoms and complaints is to observe the content which occurs before the change in order to strengthen nursing care.

All nurses are organized to learn {Medical Malpractice handling Regulations (nursing documents writing regulations, and the relationship between nursing and law, to participate in the nursing department organization medical legal experts which explains about the medical dispute cases and the compensation event. By learning these knowledge enables nurses to understand laws and regulations, increases the awareness of the law in the work conscientiously with their legal norms. The author invites old nurse to explain the mistake accident hemodialysis

process which had occurred. Then we discussed and deepen the understanding of risk events to improve nurses' consciousness of risk prevention to work seriously each dialysis process, enhance the sense of responsibility and ensure the quality of nursing.

The author also suggests to strengthen the monitoring and management of risk: Firstly, the head nurse monitors nursing measures weekly, and solves the problems in time. Secondly, nurses need to focus on severe patients do supervision. Finally, the evaluation of nurses emergency ability and the theory knowledge should be used to make nurses the risk treatment method by heart, once happened to answer calmly.

nurses to improve the service quality: 1 nurse is assigned weekly to learn dialysis lectures related to theoretical knowledge, various rescue risk plan. Dialysis patients nursing safety aims to improve nurse level based on business theory. A quarterly full evaluates on the knowledge, performance appraisal and performance management hook. The author organizes 1 nursing security exchange a week who analyzes the risks and potential in the work, put forward prevention measures. The accident is eliminated when it is a bud. Hemodialyzed specialist training program is made for new nurses, to master the hemodialysis related theory and operation skill. And they can do independent work after passing the examination.

The nurses should enhance the communication with patients and their families, prevent easy happening on dialysis process risk events and how to cooperate with the treatment, reduce risk, make compliance of conscious patients.

#### **4. Analysis and nursing of hemodialysis patients with deep venous catheter**

562 cases of hemodialysis in the treatment of deep vein in dwelling double lumen catheter temporary patients, 12 cases of accidental decannulation. The author analyzes reasons for tube-off, and put forward the counter measure of nursing. The occurrence of detached and treatment compliance of patients are closely related. The elderly patients who are unconsciousness and emotional instability are off potential significant risk. Indwelling catheter before and after the strict safety risk assessment strengthens health education and psychological care to improve patient compliance and self-protection capability. The catheter fixation methods prevent accidental removal of tube formation in individual interests.

Vascular access is the lifeline of hemodialysis patients, which is a prerequisite for dialysis. Since August in 1996, blood purification center in our hospital proceeds for emergency or short-term blood purification treatment. Arteriovenous fistula is not mature or stenosis and occlusion is in need of emergency dialysis. Taking temporary deep vein double lumen catheter method is used for vascular access. A total of 562 patients were performed in 12 cases tube-off, removing pipe accident. The occurrence rate was 2.1.

### **RESULTS**

After the implementation of risk management measures, the risk awareness and risk resisting ability is improved obviously. Nurses care for patients according to law, guard against the risk prevention by self-discipline which is significantly enhanced. Nursing defects decreased from 9 cases in 2007, 6 in 2008 to 1 cases in 2009. Nursing satisfaction rose from 94% in 2009 to 98.5% in 2007. There are no nursing disputes, complaints of nursing errors, machine deaths in these 2 years. Discussion the nurse is the concrete implementation in the forefront of medical operation risk to strengthen the ability of nursing staff. The risk consciousness ability and defuse the risks are the key to the development of nursing risk management. Since the development of risk management, the risk awareness of nurses need to be strengthened in the process of dialysis, and the sense of responsibility has to be improved. Taking the initiative to strengthen communication with patients, actively participate in the management of departments. Found the problem and symptom in time, then analyze and solve it quickly, resolve a variety of potential risks. The anti-risk ability is improved under that condition.

The implementation of risk management, carrying high nurse service quality is the basic guarantee. The nurses can provide high quality, patient safety services to implement the risk management strategy only with nursing operation excellent technology, rich theoretical knowledge. The active learning initiative discussion has been enhanced obviously. Specialized theory knowledge has been consolidated and improved. Emergency and nursing ability has obvious been progress.

In the implementation of risk management, we must seize the "people-oriented" concept. Blood dialysis is a technical, professional work with high responsibility. We continue to perfect the management system and work flow, improve the theoretical level and risk awareness. We continue to explore countermeasures better, reduce nursing risks in the process of hemodialysis, and nursing care for patients to provide quality, safe, efficient.

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