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Research of falls risk of taking central nervous system drugs in oncology inpatients

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ABSTRACT

This study aimed to analyze the medication use and related falls risk of central nervous system(CNS) drugs in oncology inpatients, explore the association between CNS drugs and falls. In this study, we enrolled inpatients, hospitalized in the oncology department of the Teaching Hospital of Chengdu University of Traditional Chinese Medicine, from March 2013 to October 2015. All inpatients were divided into two groups: taking-CNS drugs group (treatment group) and non CNS drugs group (control group). The falls risk between two groups were being compared and analyzed. Results showed that a total of 768 inpatients were enrolled in this study; 401 of them were males and 367 were females; the average age was 47.9 ± 5.8 year-old. Of them, 129 were taking CNS drugs, while 639 were not. In the treatment group, the number of fall patients was 39, at an incidence rate of 30.23%; of the 39 fall patients, 3 suffered fractures, and 1 suffered an intracranialhemorrhage; while in the control group, the

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incidence of falls totaled at 45, at an incidence rate of 7.04%; 4 of the patients suffered fractures. The difference of incidence rate between two groups had statistical significance ($P < 0.01$). The incidence rate of falls in the treatment group was 4.29 times that in the control group. By the further analysis of CNS drugs, results implied that hypnotics, sedatives, selective serotonin reuptake inhibitors (no patient taking tricyclic antidepressants in this study), opioids, antiepileptics and antipsychotics had relationship with falls ($OR > 1$). Our finding indicates that oncology inpatients have a higher risk of falls resulting from taking CNS drugs. Therefore, it is necessary to build up a systemic mechanism of nursing safety management on preventing falls of oncology inpatients, to improve nursing quality, and reduce the risk of falls.

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Introduction

During the hospitalization, the number of inpatients receiving injuries from falling accounts for 23%-42%. Of those patients who are injured 2%-9% suffer from severe injuries. These include fractures, subdural hemorrhage, and death. Oncology inpatients are at greater risk of falls than others, not only because of the disease itself, but also because treatment such as chemo, radiation, and medication with fall risk increasing drugs (FRIDs).¹

Studies show that the elderly are at higher risk of taking central nervous system (CNS) drugs²⁻⁴; these include antianxieties, antidepressants, hypnotics, sedatives, antipsychotics, antiepileptics (AED), opioids, and nonopioids. Oncology inpatients tend to suffer from symptoms of anxiety, depression, insomnia, cancer-pain, and epileptic seizures, resulting in the use of CNS drugs listed earlier. In clinic, it turns out that those drugs have high risk of falls, and some patients might suffer from intracranial hemorrhage, fracture or other severe adverse events.⁵ It will not only increase patients' suffering or aggravate their financial burden, but also lead to potential disputes and lawsuits related to fall events,^{6,7} as there is a lack of sound reimbursement system of their expenses on fall events.

Currently, there is a plethora of research that has been conducted on the incidents and risk of falls among elderly patients, or patients who are taking CNS drugs, or patients with tumor, though, does the falls risk might be higher if the patient with tumor takes CNS drugs? And how much might it be? Data related to this topic is unclear.

Thus, this study aims to observe the use of CNS drugs in oncology inpatients, and through the use of a treatment group and control group, explore the association between CNS drugs and falls.

Materials and method

Study subjects

Inpatients hospitalized in the oncology department of the Teaching Hospital of Chengdu University of Traditional Chinese Medicine (TCM), from March 2013 to October 2015, were enrolled in this study. They were divided into 2 groups taking-CNS drugs group (treatment group) and non-CNS drugs group (control group). The falls risk between 2 groups were being compared and analyzed.

Standardization was done by adopting the Morse Fall Scale to evaluate falls risk of inpatients after admission, whereas a score > 45 means high risk. Besides, for high-risk inpatients, precautions would be taken to reduce the risk. A reporting system was implemented for all inpatients falls. Methods used to record falls included observation from hospital personnel (doctors, nurses, etc), family or relatives and self reporting from patients themselves, by immediately reporting the doctor or nurse in charge.

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