Safety Problems and Intervention Measures of Medication in Chinese Elderly

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Abstract. As a special group in China, the elderly accounted for relatively large. The problem of rational drug use has become a focus in the society. The elderly are in the aging state in physiological, psychological and other aspects. As the prevalence increases, drug abuse increases and the consequent adverse reactions are endangering the health of the elderly. This paper analyzed the safety problems of medication in the elderly and explores safe, effective and individualized interventions, so as to provide a reference for clinical decision making.

Introduction

With the rapid development of economy and society, the living standards of the residents have gradually increased and the death rate of the population has dropped. China has the most elderly population in the world and becomes one of the fastest aging countries in the world. As they grow older, their psychology and physiology deteriorate and the prevalence increases\cite{1-3}. The most common way to treat senile diseases is oral medication, and the long-term use of medicines is inevitable\cite{4,5}. According to statistics, about 1/7 of the patients died due to irrational drug use\cite{6}, so it is very important to pay attention to the safety of medication for the elderly.

Safety Problems of Medication

Polypharmacy

Polypharmacy refers to the use of multiple medications (≥5) at the same time or given to medications that exceed the actual clinical needs\cite{7}. A domestic study found that the average type of the medication in elderly was 8 species, of which up to 23 species\cite{8}. An outpatient data shows that about 60.0% of elderly people in our country have multiple drug use cases\cite{9}. Many studies have shown that polypharmacy is able to cause undetected drug-induced diseases, lead to potential adverse drug reactions and may lead to worsening of patient's health condition, causing malnutrition, falls and fractures.

Random Medication

Most of the elderly lack the knowledge of rational drug use because of the lack of medical knowledge, the loss of cognitive ability and memory. Some older people do not know much about the pharmacological effects and adverse reactions of drugs. There are some phenomena
such as self-medication and random medication. An investigation shows that\(^{10}\), 25.3% of the elderly never consult a doctor before taking the drug, especially health products. After all, the reasons for these phenomena are all the elderly lack of knowledge of rational drug use. Therefore, the focus of medical workers is to improve the cognitive level of drug use in the elderly.

**Poor Compliance**

Some of the elderly feel that they have “ill for a long time to become a doctor” and will adjust their medication according to their own situation. A survey shows that in the long-term medication process, 47.3% and 31.7% of the elderly withdrawal or reduction when to they feel better. According to Rand et al.\(^{11}\), the compliance rate is 50% -65% in non-hospitalized patients, whereas the proportion is 40%-75% in non-hospitalized elderly patients. In the case of hypertension, 5.8% of the elderly understand the type of drug and the mechanism of action\(^{12}\). In addition, the elderly prone to forgetting and missing due to the loss of the memory; there are many older people do not know how to deal with the symptoms worse, there will be excessive medication problems. There are many elderly people who experience excess symptoms may take too much medication.

**Inappropriate Medication**

The elderly is different from the adults in physiological and psychological due to age. The sensitivity of adverse drug reactions in the elderly is enhanced. Often, some medications for adults are not applicable to the elderly\(^{13}\). Beers et al first proposed the concept of potentially inappropriate medications (PIMs) for the elderly in 1991\(^{14}\). At present, the phenomenon of inappropriate medications is more widespread in the elderly, resulting in the incidence of adverse reactions in the elderly is higher 2 to 3 times than adults. The inappropriate medications in the elderly can lead to adverse reactions and treatment ineffective, worsening the disease or prolonging the course of the disease in elderly patients.

**Intervention Measures of Medication**

**Reduce the Dose and Type**

Studies have shown that the incidence of adverse reactions was 3.4% when taking 5 kinds of drugs at the same time, while the incidence of adverse reactions increased to 25% when taking more than 10 kinds of drugs\(^{15}\). We prefer non-drug therapies over prescriptions, such as life intervention. If we must use drugs, we should determine the optimal frequency of medication, prefer to use sustained release agents, controlled release agents or fixed combination of certain drugs\(^{16}\). We are rigorous assessment before medication, as far as possible to reduce the type of drug and avoid the same category, repeated use of traditional Chinese and Western medicine\(^{17}\).

**Focus on the Difference between the Elderly and Adults**

Along with the growth of the age, especially after the age of 75, the elderly have changed in physiologically, pathologically and psychologically. Their ability to deal with medicines is obviously different from that of young adults. In order to set the appropriate prescription standards for the elderly, Beers organized the United States Gerontology, and other well-known experts majored in clinical pharmacology and psychopharmacology worked out the Beers Standard in 1997\(^{18}\). The Beers standard describes 48 drugs that the elderly avoid or
limit to use, 20 drugs that are not appropriate for the specific condition, and the level of harm. At present, we should pay more attention to the varieties and quantities of medicines used by the elderly and formulate standards that accord with China's national conditions so as to provide personalized medication guidelines for the elderly.

**Strengthen Health Education**

As medical workers, we should publicize the knowledge of rational drug use and enhance the sense of scientific medication for the elderly. We should advocate accepting diagnosis and treatment actively, obeying the prescriptions. At the same time, we should also strengthen the role of community and family members in drug treatment in the elderly[19]. Through a variety of ways, such as the distribution of medical knowledge and information, health education seminars, targeted guidance and other methods to ensure the safety of medication for the elderly. We instruct the elderly in learning how to use different reminders to avoid mistakes or missed medicines, such as using different color and shape boxes to pack different medicines, labeling, setting alarms, etc[20]. Caregivers should promptly urge and patiently remind the elderly. They should instruct the elderly in taking medicines on time and quantify and following the doctor's advice, and monitor the use of health products.

**Psychological Care**

We should repeatedly emphasize the possible adverse reactions and consequences of taking medication with the elderly, but we should pay attention to alleviate the fear of the patients and instruct the elderly in not repelling the medication[21-22]. The doctors should help elderly patients understand the relevant information of drugs in detail, so that the elderly eliminate unnecessary worry of medication. Their partners or children should pay attention to the observation. Once some serious adverse reactions occur, they should be promptly notified to medical staffs to avoid serious consequences. We should lead the elderly to adjust their diet constantly, working habits and living environment so as to enhance their physical fitness and lead a healthier life.

**Summary**

The characteristics of the elderly are high prevalence, multiple diseases, the combined use of many types of drugs, poor compliance and so on, therefore, the use of medicines should be paid more and more attention by medical workers[23]. As medical workers, we should pay attention to the changes in the physical and psychological of the elderly. All of us should choose non-drug treatment instead of drug treatment, follow the principle of rational use of drugs, popularize drugs and related medical knowledge, improve the medication compliance of the elderly, and continue to take measures to ensure safety of medication and quality of life in the elderly. Only in this way can we solve the problem of the safety of medication for the elderly, such as unreasonable use of medicines, poor administration of multiple medicines and poor medication compliance, so as to improve the quality of life and the level of health of the elderly and thus promote social stability.

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