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Polypharmacy As An Actual Problem Of Pharmacotherapy

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ABSTRACT

As people age, the risk for developing chronic health conditions becomes more common. A consequence of managing multiple chronic health conditions is the daily use of several different medications. Although no concrete definition of the term exists, polypharmacy has come to mean the use of several (usually five or more) medications on a daily basis, with the possibility that these may not all be clinically necessary. The consequences of polypharmacy can be dangerous and can include adverse drug reactions and unintentional overdose.

KEYWORDS

Adverse effect, drug Interaction, polypharmacy, non-steroidal anti-inflammatory drugs;

INTRODUCTION

In the modern world, there is a rapid growth in the creation and implementation of a huge number of medicines in practical health care, which, on the one hand, are able to cure or improve the patient's condition, on the other hand, to cause significant harm to health. The desire to improve the effectiveness of treatment, to help the patient recover from all diseases that have developed in him, inevitably leads to the prescription of a large number of

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drugs (drugs) - polypharmacy (from the Greek. Poly - a lot, pragma - an object, thing).

MAIN PART

Polypharmacy is a serious public health problem, as it is clinically manifested by a decrease in the effectiveness of pharmacotherapy and the development of serious adverse reactions, as well as a significant increase in health care costs. The term "polypharmacy" is often used in the medical literature, but there is no generally accepted definition. In domestic literary sources, polypharmacy is defined as the simultaneous prescription of a large number of drugs, including their unjustified use [1,2].

Polypharmacy is often defined as the regular intake of at least five drugs, but the clinic needs to be based on practice [7]. A goal should be set to reduce inadequate polypharmacy (inappropriate prescription of too many drugs) and to ensure rational prescription of multiple drugs based on the best available evidence and taking into account the individual factors and conditions of the patient) [6].

Some authors classify polypharmacy into small (simultaneous administration of 2-4 drugs), large (simultaneous administration of 5-9 drugs) and excessive (simultaneous administration of 10 or more drugs). Polypharmacy is classified as justified and unjustified [9]. With justified polypharmacy, several drugs are prescribed to achieve a therapeutic goal under constant monitoring of efficacy and safety. In case of unreasonable polypharmacy, to achieve the goal, drugs of different groups are used that can enter into drug interactions and cause serious side reactions, monitoring of the effects is not carried out, it is more common with self-medication [10].

Considering that many patients have several chronic diseases and they are forced to take drugs from different groups at the same time, it is necessary to pay attention to the peculiarities of the interaction of NSAIDs with other widely used drugs [8]. So, the joint use with indirect anticoagulants (in particular, warfarin) increases the risk of bleeding due to inhibition of platelet functions and damage to the gastric mucosa. Combined use with blockers of adrenergic receptors causes a decrease in the severity of their hypotensive effect, and with ACE inhibitors, hydralazine and prazosin - its neutralization[5,6].

The most famous complication of NSAIDs, which is manifested by the development of erosions of the mucous membrane and ulcers of the stomach or duodenum, as well as bleeding, perforations and violations of the gastrointestinal tract. Patients who received NSAIDs die as a result of complications from the gastrointestinal tract 2-3 times more often than those who did not receive any drugs in this group [3,4]. Currently, in the developed countries of the world, against the background of a decrease in the incidence of H. pylori - associated ulcers, it is the use of NSAIDs that determines the majority of episodes of bleeding in the gastrointestinal tract [8].

The development of this complication is associated with an increase in the permeability of the intestinal wall, making it less resistant to external factors, and the movement of bacteria and their components with the development of chronic inflammation [11,12]. The most common manifestation of this pathology is subtle blood loss, the source of which can be difficult to diagnose changes in the mucous

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membrane of the jejunum and ileum, leading to the development of clinically expressed iron deficiency anemia [15].

There are also reactions of hypersensitivity to NSAIDs. The highest risk of their occurrence is in patients with severe bronchial asthma and nasal polyps - almost 80% of them develop adverse reactions to acetylsalicylic acid [13]. Patients with nasal polyps, bronchial asthma, or chronic urticaria also have an increased risk of hyperreaction to other NSAIDs, usually in the form of bronchospasm and shortness of breath. It is important to note that these are hypersensitivity reactions, not allergies, since they are not mediated by immunoglobulin E [16].

The combined use of NSAIDs with diuretics leads to neutralization of their natriuretic (furosemide, spironolactone) and hypotensive effect (furosemide, thiazide diuretics). On the other hand, the concentration of some drugs (lithium, digoxin, aminoglycosides, methotrexate) in plasma when combined with NSAIDs can significantly increase, which inevitably leads to the manifestation of their toxic effect [13,14].

Since NSAIDs are lipophilic and cross the blood-brain barrier, most of them can cause side effects from the central nervous system [5]. Headache, dizziness, mood lability, depression, insomnia, depersonalization, tremor, psychosis (when treated with indomethacin, tolmetin), drowsiness, visual impairment, damage to the peripheral nervous system (when treated with meloxicam) are noted, hearing loss and tinnitus are possible (with taking salicylates), rare cases of aseptic meningitis have been described [7,8].

In the treatment of NSAIDs, kidney damage is possible: reversible renal failure with an increase in creatinine levels, tubular necrosis, acute interstitial nephritis, nephrotic syndrome. Risk factors for induced kidney damage include advanced age, concomitant kidney disease, heart failure, and diuretic use [14,15].

CONCLUSIONS

So, the choice of the optimal NSAID for a particular patient is influenced by a whole complex of factors: efficacy, safety, selectivity in relation to COX-2, the presence of a toxic effect on cartilage (which is especially important in osteoarthritis), pharmacodynamic properties, ease of dosage, form of release, compatibility with other drugs, cost, individual sensitivity of the patient, his age, the presence of an underlying disease, concomitant pathology.

Thus, NSAIDs, on the one hand, are indispensable drugs for the treatment of many diseases, on the other hand, they have a significant number of various undesirable effects associated with both the drugs themselves and with their interaction with other active chemical compounds.

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