



Article

The Role, Importance, and Current Problems of Iatrogenia in Medicine

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Abstract: This article analyzes the role, significance, and modern problems of iatrogenesis in medical practice. Iatrogenesis is a pathological condition arising as a result of medical interventions, diagnostics, or pharmacotherapy, which is one of the pressing problems of modern medicine. The study extensively covers the causes of iatrogenic pathologies, including side effects of medications, incorrect diagnosis and treatment, as well as ethical and deontological errors of medical workers. The article analyzes the clinical significance of toxic effects arising during pharmacotherapy, including hepatotoxicity, nephrotoxicity, neurotoxicity, and severe complications such as allergic reactions, in particular anaphylactic shock. It is also substantiated that the use of new drugs and technologies in medical practice, on the one hand, increases the effectiveness of treatment, and on the other hand, can cause the emergence of new types of iatrogenic diseases. In the development of iatrogenesis, not only medical factors, but also the individual psychological characteristics of the patient, communication between the doctor and the patient play an important role. Therefore, in the prevention of iatrogenesis, it is important to make an accurate diagnosis, organize treatment based on an individual approach, as well as strictly observe the principles of medical ethics and deontology.

Keywords: Iatrogeny, toxicity, medicine, professional activity, anatomy, histology, ethics, and deontology.

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Introduction

In modern healthcare systems, ensuring patient safety and improving the quality of medical care remain among the most pressing priorities. However, alongside rapid scientific and technological advancements in medicine, there has been a noticeable increase in complications associated with medical interventions, commonly referred to as iatrogenia. Iatrogenia encompasses a wide range of adverse conditions resulting from diagnostic procedures, therapeutic interventions, pharmacological treatments, or even the communication between healthcare providers and patients[1]. As such, it represents a complex and multifactorial problem that continues to challenge medical professionals worldwide[2].

The growing prevalence of iatrogenic conditions is closely linked to the increasing use of high-potency medications, advanced diagnostic technologies, and invasive procedures. While these innovations have significantly improved treatment outcomes and reduced mortality rates, they have also introduced new risks, including drug toxicity, allergic reactions, nosocomial infections, and procedural complications. In particular, adverse drug reactions—such as hepatotoxicity, nephrotoxicity, and neurotoxicity—

remain a major contributor to iatrogenic morbidity, emphasizing the need for careful monitoring and individualized treatment approaches[3].

Moreover, iatrogenia is not limited to physical complications. Psychological and ethical aspects also play a crucial role in its development. The behavior, communication style, and professional competence of healthcare providers can significantly influence patients' emotional state and overall health outcomes. In some cases, improper communication or lack of adherence to medical ethics and deontology may lead to anxiety, mistrust, or even psychosomatic disorders, further complicating the clinical picture[4].

Another important dimension of iatrogenia involves systemic and organizational factors, such as inadequate adherence to clinical guidelines, improper use of medical equipment, and violations of aseptic and antiseptic protocols. These issues contribute to the increasing incidence of hospital-acquired infections and other preventable complications. Therefore, addressing iatrogenia requires a comprehensive approach that includes improving medical education, strengthening ethical standards, enhancing patient-centered care, and implementing strict quality control measures[5].

Given its multifaceted nature and significant impact on patient safety, the study of iatrogenia remains highly relevant. Understanding its causes, mechanisms, and preventive strategies is essential for minimizing risks and ensuring the effectiveness of modern medical practice[6].

Relevance: The prevalence of iatrogenic pathologies is increasing worldwide every year. The concept of "iatrogenesis" is one of the main problems of modern medical practice, it has been and remains relevant in the practical activities of doctors in the diagnosis and pharmacotherapy of many diseases[7].

Goals and objectives: From various branches of medicine, doctors were among the first to understand the danger of their professional activities to human health. Considering the inevitable side effects of medications, the primary task for healthcare workers with therapeutic measures is their prevention[8].

Materials and Methods

The materials and methods are rich literature worldwide on various origins of iatrogenesis according to the international statistical classification of diseases and anatomical- histological changes in postmortem examination after anaphylactic shock. Progress of medical science, although the introduction of new highly active medicines and vaccines into medical practice has ensured shorter periods and complete recovery of patients, reduces disability and mortality, but they can induce resistance to the ongoing therapy and accompany the occurrence of superinfection, as well as provoke the emergence of a new disease or anaphylactic shock.

In this regard, X. B. Vuori's assertion that "medicine has reached a point where any appeal to a doctor carries not only benefits but also risks of losing health and even life" can be considered correct. Iatropathies include all negative consequences for the patient of incorrect actions or doctor's prescriptions, or the unjustified use of instrumental and laboratory tests to the detriment of the patient's health[9].

According to leading clinicians E.M. Tareev and I.A. Kassirskiy, they made an addition to the above - not only the negative consequences of therapeutic procedures, but also any diagnostic measures that cause a pathological condition (manipulation, diagnostic, surgical, resuscitation, etc.) also relate to iatrogenesis[10].

According to V.V. Nekachalov (V.V. Nekachalov, 1998), pathological processes, reactions, and complications caused by medical intervention, performed correctly and with justified indications, also fall under the category of iatrogenesis[11].

The German psychiatrist Bumke (O.S.E. Bumke) pays great attention to the patient's moral, ethical, and spiritual state, the resulting health disorders, as a result of the doctor's

words and actions affecting the patient. Taking into account that all this was already known to ancient physicians, in 1925 he wrote an article "Doctor as a Cause of Mental Disorders," and after this, the term "iatrogenesis" became widespread only after its publication. Therefore, all these cause-and-effect relationships are of great importance in the process of treating the disease, and this should always be remembered not only by the treating physician but also by medical personnel[12]. For the development of iatrogeny (the activity of a practicing physician), the behavior, ethics, and deontology of the physician and service personnel, as well as the characteristics of the patient's personality, i.e., the degree of emotionality, suspicion, and other factors, are important. Many infected people suffer not only from the disease but also from the anxiety, fears, and concerns about the outcome of the ongoing pharmacotherapy. This explains the patient's particular attention to both the doctor's words and their behavior, intonations, and facial expressions. From the patient's perspective, it is important depending on the type of nervous activity, lifestyle, personality, and psychological characteristics, as different patients react differently, sometimes oppositely, to certain words and behaviors of the medical worker.

Results and Discussion

Included pharmacotherapy drugs can induce resistance to the ongoing therapy, contribute to the occurrence of superinfection, and also contribute to the emergence of a new disease. Each drug has its own side effects in the form of hepato- and nephrotoxicity, and the encephalo-, oto-, and neurotoxicity of many drugs is known. In recent years, the osteo- and myelotoxicity of some antibiotics and psychotropic drugs has been observed very frequently, after their use, the development of agranulocytosis and aplastic anemia has been noted[13]. It should also be remembered that based on the toxic effect on the fetus in pregnant women after taking the calming drug thalidamide, the "thalidamide catastrophe" began, and after the 1960s, drugs began to be studied in all directions. It is necessary to note another difficulty in recognizing side effects of drug therapy - delayed (sometimes significant) development[14]. For example, this can include the embryo- and ototoxic effects of streptomycin, as well as the cardiotoxic effect of rubomycin, which, according to a number of authors, is subsequently implemented by dilated cardiomyopathy. In some cases, after proper and justified rational pharmacotherapy of the underlying disease, complications arise, which can be called manifestations, but such treatment measures are also recognized as iatrogenesis[15].

The analysis of modern clinical and scientific data demonstrates that iatrogenia remains one of the most significant and growing problems in contemporary medical practice. According to global studies, up to 10–15% of hospitalized patients experience some form of iatrogenic complication, and approximately 5–7% of cases are associated with severe outcomes, including disability or death. The obtained data show that iatrogenic conditions are most commonly associated with pharmacotherapy (up to 60%), diagnostic procedures (20–25%), and surgical or invasive interventions (15–20%)[16]. Among pharmacological causes, adverse drug reactions such as hepatotoxicity, nephrotoxicity, and neurotoxicity are dominant. In particular, antibiotics and psychotropic drugs are responsible for nearly 30–35% of drug-induced complications, including agranulocytosis and aplastic anemia. In addition, a significant proportion of iatrogenic complications is related to organizational and technical errors[17]. Violations of aseptic and antiseptic rules account for approximately 20% of hospital-acquired infections, while improper reuse of disposable medical instruments increases the risk of infection by 15–18%. Furthermore, the use of invasive devices such as ventilators, catheters, and drainage systems contributes to the development of nosocomial infections in 10–12% of cases[18].

Psychological iatrogenia also plays an important role. According to clinical observations, up to 25% of patients experience anxiety, fear, or psychosomatic reactions

caused by improper communication or behavior of medical personnel. This highlights the importance of medical ethics, deontology, and effective doctor–patient interaction[19].

1-Table. Distribution of Main Causes of Iatrogenic Complications.

Cause of Iatrogenia	Percentage (%)
Pharmacotherapy (drug-related)	60%
Diagnostic procedures	25%
Surgical and invasive interventions	15%

The table shows that pharmacotherapy is the leading cause of iatrogenic complications, accounting for the majority (60%) of all cases. This is primarily due to the widespread use of potent medications and the complexity of their effects on the human body. Diagnostic procedures also contribute significantly (25%), particularly when performed excessively or without sufficient clinical justification. Surgical and invasive interventions represent a smaller but still important proportion (15%), often associated with procedural risks and postoperative complications[20]. Overall, the findings indicate that iatrogenia is a multifactorial problem involving medical, organizational, and psychological factors. The high prevalence of drug-related complications emphasizes the need for careful prescription practices, individualized treatment strategies, and continuous monitoring of patients. At the same time, improving adherence to clinical protocols, strengthening infection control measures, and enhancing communication between healthcare providers and patients are essential steps in reducing the incidence of iatrogenic conditions.

Conclusion

Iatrogenesis in medical practice is a disease of medical origin, therefore, when prescribing medications, the physician must consider the patient's condition, the severity of the pathological process, and determine the appropriate dosage of the drug and the course of treatment. Remember that, in addition to known side effects, the drug may also have unexplored side effects, which must be brought to the attention of the Pharmacological Committee of the Republic of Uzbekistan.

When pharmacotherapy is carried out with beta-lactomic ring drugs and other drugs, iatrogeny can occur in medical practice as a short-term anaphylactic shock with a rapid course, subsequently leading to death, and subsequently is recorded in pathological - anatomical and histological studies. The increasing number of complications caused by the repeated use of disposable instruments, violation of aseptic rules, is causing concern. Cases of nosocomial infection through ventilators, catheters, and drainage systems are more frequently recorded. It should also be remembered that there may be legal liability for harm caused to health, and that in all difficulties, the fundamental postulate "do not harm!" should remain an axiom for any doctor in the 21st century.

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