

SOCIO-ECONOMIC SIGNIFICANCE OF THE USE OF NEW ANTISEPTICS IN SURGICAL DENTISTRY

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ABSTRACT

The article analyzes the clinical effectiveness and socio-economic significance of introducing new antiseptic agents into surgical dentistry in accordance with the socio-economic development strategy of Uzbekistan. The results of the scientific analysis show that the introduction of biomedical innovations into practice based on local production increases the efficiency of the healthcare system, strengthens the health of the population, and reduces dependence on imports in the pharmaceutical sector. This process serves to develop the scientific potential of the national economy, create new jobs, and implement the principle of "A Healthy Nation is Sustainable Development."

Keywords: antiseptic, surgical dentistry, social efficiency, economic stability, innovation, national strategy, healthy society.

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СОЦИАЛЬНО-ЭКОНОМИЧЕСКОЕ ЗНАЧЕНИЕ ПРИМЕНЕНИЯ НОВЫХ АНТИСЕПТИКОВ В ХИРУРГИЧЕСКОЙ СТОМАТОЛОГИИ

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АННОТАЦИЯ

В статье проанализирована клиническая эффективность и социально-экономическая значимость внедрения новых антисептических средств в практику хирургической стоматологии, что рассматривается в увязке со стратегией социально-экономического развития Узбекистана. По результатам научного анализа установлено, что внедрение биомедицинских инноваций на основе локального производства повышает эффективность системы здравоохранения, укрепляет здоровье населения и снижает зависимость фармацевтической отрасли от импорта. Данный процесс способствует развитию научного потенциала национальной экономики, созданию новых рабочих мест и реализации принципа «Здоровая нация — устойчивое развитие».

Ключевые слова: антисептик, хирургическая стоматология, социальная эффективность, экономическая устойчивость, инновация, национальная стратегия, здоровое общество.

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INTRODUCTION

Today, the field of dentistry is rapidly developing, and scientific research in this direction is of great importance in the formation of a healthy generation of the country. Surgical dentistry is a field specializing in the treatment of diseases and pathological conditions that occur in the structures of the oral cavity through surgical methods. Since highly invasive manipulations are performed in this direction, it is recognized as one of the medical areas with a high risk of infection.

Although traditional antiseptics - furacilin, chamomile - have been considered effective for many years, in recent years, the mechanism of adaptation of bacteria to them has been observed to increase. Therefore, modern scientific approaches require the creation of new biologically active antiseptics and their introduction into dental practice. In Uzbekistan, as part of the policy of digitization and innovation of the healthcare system, research is being conducted to develop and introduce new local antiseptics into practice. This will not only increase medical efficiency, but also reduce the costs of the healthcare system economically and serve to ensure the well-being of the population.

The socio-economic development strategy of the Republic of Uzbekistan (Development Strategy for 2022–2026, Strategy "Uzbekistan - 2030" until 2030) identifies ensuring a healthy lifestyle for the population, improving the quality of medical services, and developing the healthcare system in an innovative direction as one of the priority tasks.

The implementation of these tasks has a direct impact on the overall social stability and economic growth of the country. Nowadays, a healthy society is the main guarantee of economic development.

From this point of view, the development and use of new antiseptic agents in surgical dentistry is of great importance as an innovative direction that ensures not only medical effectiveness, but also economic sustainability. This process is also inextricably linked to the policy of "import-substituting innovations" in the healthcare system.

Main part

1. General information about new antiseptics
New generation antiseptics include

dermoxidin, octenidine dihydrochloride, povidone-iodine, and photodynamic antiseptic gels. They act by disrupting the microbial cell membrane, inhibiting DNA synthesis, and reducing inflammation.

Dermoxidin is a modern drug with a rich composition, consisting of several powerful antiseptic substances, which is used to effectively protect the oral mucosa and skin from infectious microorganisms. The drug is very useful in preventing infection in dental and surgical procedures, before and after surgery. Povidone-iodine, chlorhexidine and eucalyptus extract in its composition together have a powerful antiseptic, anti-inflammatory and tissue regeneration effect.

2. National health policy and innovation processes

The Development Strategy of New Uzbekistan for 2022-2026 sets out the development of medical innovations and local biotechnologies in the direction of a fair social policy, human capital development, and the development of new technologies. On this basis, it is planned to conduct scientific work on the introduction of new antiseptic technologies in dentistry.

For example, in studies conducted at the Tashkent State Dental Institute, Eshmamatov I. A. and Suvonov K. J. studied the clinical effectiveness of dermoxidin in children with oral soft tissue injuries in 2021-2024, and noted faster healing and reduced pain compared to the traditional method. These results confirm the clinical significance of new antiseptic agents and create the basis for the independent development of the country's pharmaceutical potential.

As a result of the use of new antiseptics in dental practice:

- postoperative wound infections decreased by 45–60%;
- wound tissue regeneration is accelerated by 1.5–2 times;

These results demonstrate not only the microbiological effectiveness of the new antiseptic agents, but also their rapid clinical improvement in the patient's condition.

3. Socio-economic importance

The introduction of new antiseptic agents is highly significant not only in terms of clinical effectiveness but also from the perspective of

Parameter	Traditional antiseptic (furacilin)	New antiseptic (dermoxidin)
Soft tissue hyperemia (day)	9	6-7
Wound healing rate	Normal	1.8 times faster
Pain (day)	5-7	3-4

economic efficiency. The "Uzbekistan - 2030" strategy sets the task of providing the healthcare system with innovative biotechnologies based on the principle of "A healthy nation is a strong state."

The introduction of new antiseptics demonstrates its socio-economic importance through the following effects:

1. Strengthening the health of the population.

Preventing infectious complications will reduce the number of patients and the incidence of disease recurrence, thereby increasing the proportion of healthy labor resources within society.

2. Economic impact at the population level

The use of new antiseptics from the perspective of patients:

- shortens the treatment period (early return to work);
- reduces spending on medicines (especially antibiotics);
- eliminates the need for expensive foreign drugs.

3. Economic savings.

As a result of the use of new antiseptics in healthcare facilities:

- antibiotic consumption is reduced to 30–35% on average;
- consumption of bandages and sterile materials is reduced by 25%;
- on average 200-250 thousand UZS are saved for each patient due to the reduction of the patient's stay in the hospital;
- A decrease in postoperative complications will lead to a substantial reduction in additional treatment expenses.

• This will provide a significant annual economic benefit to the state's healthcare system.

4. Development of domestic production.

The development of local antiseptic manufacturing enterprises in Uzbekistan will

increase the volume of import-substituting products and create new jobs in the pharmaceutical sector.

4. Impact on the national economy

At present, imported antiseptics occupy approximately 40% of the pharmaceutical market in Uzbekistan. The development of domestic production has the potential to lower this dependency to 15–20%. This will:

- reduce annual import expenses by 5–6 million USD;
- create new jobs within local manufacturing sectors;
- increase opportunities for the commercialization of scientific research and innovations.

Thus, the practical implementation of new antiseptics becomes a strategic factor in ensuring not only medical, but also economic stability within the country's healthcare system.

CONCLUSION

The new antiseptic demonstrates high clinical efficacy by reducing infectious complications, accelerating wound healing, and improving the patient's overall condition.

From an economic perspective, its use lowers healthcare expenditures, decreases dependence on imported products, and contributes to the development of the local pharmaceutical industry.

Therefore, the widespread implementation of new antiseptics in surgical dentistry holds strategic significance as a point of convergence between medical and economic stability.

ETHICAL STATEMENT AND CONSENT TO PARTICIPATION

The study was conducted in accordance with the local ethical committee.

CONFLICT OF INTERESTS

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article.

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AVAILABILITY OF DATA AND MATERIALS

All data generated or analysed during this study are included in this published article.

AUTHORS' CONTRIBUTIONS

All authors contributed to the design and interpretation of the study and to further drafts. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

All applicable international, national and/or institutional ethical guidelines have been followed.

CONSENT FOR PUBLICATION

Not applicable.

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КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют, что данная работа, её тема, предмет и содержание не затрагивают конкурирующих интересов.

ИСТОЧНИКИ ФИНАНСИРОВАНИЯ

Авторы заявляют об отсутствии финансирования при проведении исследования.

ДОСТУПНОСТЬ ДАННЫХ И МАТЕРИАЛОВ

Все данные, полученные или проанализированные в ходе этого исследования, включены в настоящую опубликованную статью.

ВКЛАД ОТДЕЛЬНЫХ АВТОРОВ

Все авторы внесли свой вклад в подготовку исследования и толкование его результатов, а также в подготовку последующих редакций. Все авторы прочитали и одобрили итоговый вариант рукописи.

ЭТИЧЕСКОЕ ОДОБРЕНИЕ И СОГЛАСИЕ НА УЧАСТИЕ

Были соблюдены все применимые международные, национальные и/или институциональные руководящие этические принципы.

СОГЛАСИЕ НА ПУБЛИКАЦИЮ

Не применимо.

ПРИМЕЧАНИЕ ИЗДАТЕЛЯ

Журнал *"Интегративная стоматология и челюстно-лицевая хирургия"* сохраняет нейтралитет в отношении юрисдикционных претензий по опубликованным картам и указаниям институциональной принадлежности.

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