INOVAÇÃO EM TECNOLOGIA FARMACÊUTICAS: A REVOLUÇÃO DAS TERAPIAS PERSONALIZADAS

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Abstract

Introduction: Advances in pharmaceutical technology have revolutionized the pharmaceutical industry, improving the therapeutic efficacy and safety of treatments. Innovations such as new dosage forms, modified release systems, nanotechnology, and biotechnology have been fundamental. The use of natural resources, especially from Brazilian biomes, such as the Caatinga, is promising in the search for bioactive molecules with therapeutic potential. Research Problems: Despite the advances, the Brazilian pharmaceutical industry faces challenges, such as low innovation capacity and dependence on imported pharmaceutical inputs. General Objective: To investigate innovations in pharmaceutical technologies that enable personalized therapies to improve the efficacy of treatments. Justification: Personalization of therapies is crucial to treat complex diseases, allowing adaptations based on the individual characteristics of patients. Development: Personalization of pharmaceutical therapies is evolving, with emphasis on biotechnology, pharmacogenomics, and gene therapy. These technologies have shown promising results in treatments, but also raise questions about access and regulation. Materials and methods: The research will involve literature review, case studies, and ethical and regulatory assessment, with access to academic databases and interviews with professionals and patients. Results and Discussion: The results indicate that emerging technologies are shaping the future of personalized therapies, but challenges remain in terms of training, access, and regulation. Final Considerations: Innovations in biotechnology and pharmacogenomics are transforming the therapeutic approach, but overcoming challenges related to training, access, and ethics is critical to the successful implementation of personalized therapies.

Keywords: biotechnology; pharmacogenomics; gene therapy; personalized therapies; equitable access; ethical challenges