Interactions between nutraceuticals and drugs for the treatment of non-communicable chronic diseases: a systematic review

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Introduction: The use of nutraceuticals has grown exponentially due to their health-promoting properties. However, their combination with drugs can generate interactions that alter the pharmacokinetics and pharmacodynamics of the treatments [1–3]. **Objective:** This systematic review analyzes the current literature on these interactions and their clinical implications, with a focus on diet-related non-communicable chronic diseases (NCDs). **Methodology:** Different databases (PubMed, Scopus, and Web of Science) were searched using keywords such as “nutraceuticals,” “drug-drug interactions,” and “dietary supplements.” We included studies published in the last 11 years that evaluated interactions between nutraceuticals and drugs, with an emphasis on those used to treat chronic NCDs such as diabetes, hypertension, and dyslipidemias. Six authors independently conducted the systematic review, screening the titles and abstracts for relevance and assessing the full texts of eligible studies. Discrepancies were resolved through discussion and consensus. **Results and Discussion:** The studies reviewed show that interactions between nutraceuticals and drugs can affect the efficacy of chronic NCDs treatment. In the case of diabetes, compounds such as turmeric and cinnamon can potentiate the hypoglycemic effect of drugs such as metformin, increasing the risk of hypoglycemia [4]. Similarly, the use of omega-3 fatty acid supplements in combination with antihypertensives may lead to an excessive reduction in blood pressure [5]. On the other hand, some nutraceuticals may interfere negatively with treatments. Grapefruit juice, by inhibiting the *CYP3A4* enzyme, may increase the plasma concentration of statins used in the treatment of dyslipidemia, increasing the risk of adverse effects. It has also been observed that magnesium can reduce the absorption of certain antihypertensives and osteoporosis drugs [6]. **Conclusions:** After analyzing the studies available, interactions between certain nutraceuticals and drugs used in the treatment of chronic NCDs have been identified, and some of them may compromise therapeutic efficacy, leading to adverse effects. Thus, clinical studies are needed to understand these interactions and their implications for medical practice.

Keywords: nutraceuticals; drugs; non-communicable chronic diseases

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