عنوان مقاله:

Preventing or attenuating amphotericin B nephrotoxicity with dopamine receptor agonists: a literature review

محل انتشار:

فصلنامه تحقیقات جاری در داروسازی, دوره 1, شماره 3 (سال: 1394)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Nephrotoxicity is generally considered as the most clinically significant and dose-limiting adverse reaction of amphotericin B. Currently, only the clinical effectiveness of salt loading and administering lipid formulations of amphotericin B have been clearly demonstrated to prevent its nephrotoxicity. In thisreview, we collected the published data related to dopamine receptor agonists in preventing amphotericin B nephrotoxicity. A literature search was conducted by the relevant keywords like ‘‘amphotericin B , nephrotoxicity’’, and ‘‘dopamine’’ in databases such as Scopus, Medline, Embase and ISI Web of Knowledge.Four relevant articles were considered. Results of all the 3 experimental studies demonstrated that co-administration of dopamine (0.5-10 µg/kg/min) as continuous intravenous infusion, SK&F R-105058, a prodrug of fenoldopam (10 mg/kg twice daily), orally or fenoldopam, a relatively selective dopaminereceptor type 1 agonist, (0.5 or 1 µg/kg/min) as continuous intravenous infusion can at least significantlymitigate the decrease in creatinine clearance caused by amphotericin B. Furthermore, fenoldopam and SK&F R-105058 can also protect against or delay amphotericin B-induced tubular damage. In contrast, the only clinical trial published until now found that simultaneous continuous intravenous infusion of low dosedopamine (3 µg/kg/min) had no beneficial effect on the incidence, severity and time onset of developing amphotericin B-induced nephrotoxicity in autologous bone marrow transplant and leukemia patients. Considering the lack of beneficial effects in different settings such as acute kidney injury of any cause, negativeresults of the only clinical trial, and risk of significant adverse reactions, continuous intravenous infusionof low dose dopamine (1-3 µg/kg/min) or selective dopamine receptor type 1 agonists (e.g., fenoldopam) currently appears to have no promising clinical role in preventing or attenuating amphotericin B nephrotoxicity.

کلمات کلیدی:

Amphotericin B, Nephrotoxicity, Dopamine receptor agonists, Prevention