Abstract

Introduction. Contrast media can cause acute renal failure by direct toxicity upon the tubular cells and kidney ischemia. Diabetes and hospitalized patients have more risk of developing contrast-induced nephropathy than the general population. Objective. To assess the cost effectiveness of iso- to low-osmolality contrast media in high risk outpatients. Materials and methods. The analysis was based on a systematic literature review comparing the nephrotoxic effects of iso- to low-osmolality contrast media. We only consider direct costs, which were obtained from the official tariff manual. Incremental cost-effectiveness ratios, efficiency curves and acceptability curves were calculated. Univariate and sensitivity analyses were performed for costs and effects, as well as probabilistic analyses. 0% and 3% discounts were applied to results. The cost-effectiveness threshold was equal to the per capita GDP per life-year gained. Results. Alternatives with Iopamidol and Iodixanol dominate the other ones, because both reduce risk of contrast-induced nephropathy at a lower cost. The incremental cost-effectiveness of the Iodixanol alternative compared to the Iopamidol alternative is US$ 14,660 per additional life year gained, which is more than twice the threshold. Conclusion. The low-osmolality contrast medium, Iopamidol, appears to be costeffective when compared with lohexol or other low-osmolality contrast media (iopromide, lobitridol, iomeprol, lopentol and ioxilan), in contrast-induced nephropathy high-risk outpatients. The choice of the iso-osmolality contrast medium, Iodixanol, depends on its cost per vial and on the willingness to pay.

Keywords

Contrast media, kidney tubular necrosis, acute, cost efficiency analysis.