Nephrotoxicity of low-osmolar and iso-osmolar iodinated contrast media – a pharmacovigilance study based on real-world database

zhang hewei[1], Yue Li[2], Xiaofei Ye[3], and Xiaojing Guo[3]

[1]Affiliation not available
[2]East Region Military Command General Hospital
[3]Second Military Medical University Department of Health Statistics

March 21, 2023

Abstract

Abstract Aim: We aim to compare nephrotoxic spectrum of IOCM and that of LOCM in a more intensive and comprehensive perspective using the real-world database. Methos: This is an observational, retrospective, pharmacovigilance study based on Vigibase. 7 products (iodixanol, iohexol, iopamidol, iopromide, iobitridol, ioversol and iomeprol) of ICM were included. Variable matching method was used for deduplication procedure. Two data mining method, reporting odds ratio (ROR) and bayesian confidence propagation neural networks of information components (IC) were used to detect signals for the full database, gender stratums (male and female), age stratum (0 to 64 years, 65 to 74 years and 75 or more years) and pooled analysis of total renal adverse events (AEs). Package 'base', 'utils' and 'pheatmap' of R language (version 4.1.2) were used to perform analysis and plot figures. Results: We got 2703 ICSRs and 3155 renal AE reports. The five most frequently reported were acute kidney injury, renal failure, renal impairment azotaemia and anuria. All ICM had highest signal value detected in age [?]75 years. Iodaxinal and iohexol had most signals detected. In pooled analysis of renal AEs, no signals detected for iopamidol, iomeprol and iopromide in the full database stratum. Conclusion: No evidence approved IOCM has safer nephrotoxicity than LOCM. CIN spectrum varies a lot within LOCM. Regarding to the whole population, not all products of ICM, such as iopamidol, iomeprol and iopromide, is likely to cause CIN.

Hosted file

`ICM_manuscript.docx` available at https://authorea.com/users/598226/articles/630901-nephrotoxicity-of-low-osmolar-and-iso-osmolar-iodinated-contrast-media-a-pharmacovigilance-study-based-on-real-world-database

Hosted file

`Figures.docx` available at https://authorea.com/users/598226/articles/630901-nephrotoxicity-of-low-osmolar-and-iso-osmolar-iodinated-contrast-media-a-pharmacovigilance-study-based-on-real-world-database