TITLE: Use of Iodixanol in Diagnostic Imaging: Safety

DATE: 27 January 2010

RESEARCH QUESTION:

What are the adverse events, other than nephrotoxicity, associated with the use of iodixanol as an x-ray contrast agent?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 4, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between 2005 and January 2010. No filters were applied to limit the retrieval by study type. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS:

The literature search identified four randomized controlled trials and six observational studies on the adverse events, other than nephrotoxicity, associated with the use of iodixanol as an x-ray contrast agent. No health technology assessments, systematic reviews, meta-analyses, or controlled clinical trials were identified. Relevant case reports are located in the appendix.

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, controlled clinical trials, and observational studies.

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OVERALL SUMMARY OF FINDINGS:

Four RCTs examined the safety of iodixanol compared with other contrast media. Chuang et al. (2009)\(^1\) found that 4% of patients receiving iodixanol had allergic reactions (one with a late reaction of severe skin rash), compared with 12% of patients receiving iohexol. Nie et al. (2008)\(^2\) reported that incidence of adverse cardiovascular events was lower with iodixanol, compared with iopromide (1.9% versus 8.8%). Sahani et al. (2007)\(^3\) found similar effects on heart rate with iodixanol and iopamidol. Schmid et al. (2007)\(^4\) compared heart rate and left ventricular or arterial pressures with iodixanol and iomeprol, concluding that both media were safe and had negligible effects on those outcomes.

Six observational studies examined the safety of iodixanol. Lapi et al. (2008)\(^5\) surveyed patients previously exposed to contrast media. Iodixanol was more frequently associated with delayed allergic reactions compared with more immediate allergic reactions associated with iopromide, iomeprol, and iobitridol. Wang et al. (2008)\(^6\) reviewed data from patients exposed to non-ionic iodinated contrast media. Allergic reactions occurred in 0.6% of patients, and there were rarely any long-term adverse events. Ho et al. (2007)\(^7\) compared adverse events with iodixanol and iohexol. Although occurrence of adverse events was < 1% with either agent, the incidence of immediate and delayed adverse events was significantly higher with iodixanol. Sandstede et al. (2007)\(^8\) reported that one of 99 patients experienced an exanthema on days three and seven following injection of iodixanol. Delgado-Jimenez et al. (2006)\(^9\) performed a chart review on patients who experienced late skin reactions to iodixanol and found that 12 patients (total number of charts examined not reported) experienced a maculopapular exanthema between two hours and three days after exposure to iodixanol. Le Feuvre et al. (2006)\(^10\) compared cardiac events in patients receiving iodixanol or ioxaglate. They concluded that thrombus-related events were more frequent with iodixanol than with ioxaglate (6% with iodixanol versus 0.3% with ioxaglate, for large thrombi).
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials


Controlled clinical trials
No literature identified

Observational studies


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APPENDIX – FURTHER INFORMATION:

Case reports

