REFERENCES


Contrast Nephropathy: Isosmolar and Low-Osmolar Contrast Media

We read with interest the meta-analysis by McCullough et al. (1) regarding the lower incidence of contrast-induced nephropathy (CIN) in patients who received isosmolar contrast medium (IOCM) iodixanol, as compared with those who received low-osmolar contrast media (LOCM). Nevertheless, we believe the study presents some important methodological limitations that could reduce its value.

In the meta-analysis, the greater part of the patients (789 of 1,345) included in the group receiving LOCM were given an ionic contrast medium (CM), and only 69 patients received iopamidol, the contrast agent that, according to recent data, seems to be the safest of the LOCM (2,3). Therefore, the results of the meta-analysis could derive from the small number of patients receiving iopamidol in the LOCM group, rather than to the renal safety of isosmolar iodixanol. Moreover, apart from the small meta-analysis by Clauss et al. (4) comparing the nephrotoxicity of the IOCM iotrolan with different types of LOCM (iopamidol, iopromide, and iohexol), the previous major comparative studies supporting the safety of IOCM have been performed only between ioxaglate and the nonionic LOCM monomers (5–7), which is found to be one of the CMs most responsible for CIN (2,3). Thus, at present, we do not perceive any definitive evidence of the presumed advantage derived from the use of IOCM in comparison with all of the LOCM (8).

In addition, the investigators themselves note that only 18.3% of patients included in the meta-analysis had a final creatinine (Cr) value measured on day 3 or later (1), whereas CIN is defined as an increase of serum Cr levels of 0.5 mg/dl (or 44 μmol/l) or a 25% or greater relative increase from baseline 48 to 72 h after a diagnostic or interventional procedure requiring CM administration (9). We would like to understand how the researchers completed Table 4 in their study summarizing the incidence of CIN occurring within 72 h if only 18.3% of patients have their Cr values recorded on day 3.

Finally, as underscored by the investigators (1), another important bias could be identified in the lack of data relative to the amount or type of intravenous hydration prophylactic protocol given before and after CM administration, which could influence the outcomes of each trial (10).

We believe that prospective, double-blind, randomized, controlled trials comparing iodixanol with all LOCM would be necessary to confirm the results of this meta-analysis.

*Simona Detrenis, MD
Michele Meschi, MD
Giorgio Savazzi, MD

*Department of Internal Medicine and Nephrology
University of Parma
Via Gramsci, 14
I-43100 Parma
Italy
E-mail: simonadetts@libero.it

REFERENCES