Visipaque (Iodixanol) and Hexabrix (Ioxaglate) in Renal Insufficiency

I read with great interest the RECOVER (Renal Toxicity Evaluation and Comparison Between Visipaque and Hexabrix in Patients With Renal Insufficiency Undergoing Coronary Angiography) study by Jo et al. (1). They compared the renal tolerance of iodixanol and ioxaglate in patients with renal insufficiency after coronary angiography. They found that the incidence of contrast-induced nephropathy (CIN) was lower in the iodixanol group (7.9%) as compared with the ioxaglate group (17%) (p = 0.021).

I would be interested in obtaining some details as to why substantial differences exist in the number of patients presented in different meetings (n = 281) (2,3) and in the final publication (n = 275). In this regard, I also do not understand how 164 and 117 patients for the iodixanol and the ioxaglate groups, respectively, may have been presented in previous meetings while the plan’s sample size was 150 patients in each group with a permuted block-randomization method.

Also, an intention-to-treat analysis would seem more appropriate than a per-protocol analysis. Furthermore, among risk factors that might have influenced the results, age (4) and hydration status (5,6) are crucial. Patients were older in the ioxaglate group (68.7 ± 7.5 years vs. 66.1 ± 8.6 years; p < 0.01). Although the investigators indicate that the difference is likely to be too small to be relevant it may still represent a bias that may explain at least partially their results. Volume supplementation remains the cornerstone for the prevention of CIN. Hydration status was not assessed and/or not presented. Body weight, diuresis, and volume given to the patients should be indicated to ensure comparability between groups.

Finally, CIN remains a major health issue. Only one study (7) has shown in diabetic patients with renal insufficiency that iodixanol is less nephrotoxic than iohexol. Further trials should be conducted to assess the comparative renal tolerance of low osmolar contrast media (both ionic and nonionic) and nonionic dimers.

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Evaluation and Comparison Between Visipaque (Iodixanol) and Hexabrix (Ioxaglate) in Coronary Angiography

We read with interest the report by Jo et al. (1). The reported head-to-head study (RECOVER [Renal Toxicity Evaluation and Comparison Between Visipaque and Hexabrix in Patients With Renal Insufficiency Undergoing Coronary Angiography]) compares the renal tolerance of the iso-osmolar contrast medium (CM) iodixanol to the low-osmolar CM ioxaglate using established surrogate definitions for contrast-induced nephropathy (CIN). Jo et al. (1) believe the results of the RECOVER study support the conclusions of the NEPHRIC (Nephrotoxic Effects in High-Risk Patients Undergoing Angiography) study (2), which created the hypothesis that iso-osmolar CM are superior regarding CIN as compared to the well-established low-osmolar contrast media (LOCM). To date, the NEPHRIC study was never confirmed in a larger series, a fact that has increasingly raised concerns (3).

The results of RECOVER are in complete disagreement with the results of our recent registry analysis in over 57,000 patients (4). The latter study clearly demonstrates a higher incidence of actual renal failure after iodixanol application as compared to ioxaglate or iohexol application. We note that the RECOVER study includes more patients (n = 275) than the NEPHRIC study (n = 129), but taking the reported figures of the RECOVER study at face value one cannot fail to notice some inconsistencies in the results. The broad surrogate definition of CIN, 25% relative or 0.5 mg/dl increase over baseline,