**Evidence Table E-10. Comparison between iso- and low-osmolar contrast media: adverse events**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author**  **year** | **Location** | **LOCM** | **Route** | **N** | **Population** | **Procedure** | **Mean age**  **y** | **Fe-males**  **%** | **Adverse event** | **IOCM group** | **LOCM group** | **P value** | **Follow-up** | **Primary result** | **Risk of bias** |
| Bolognese9 | Europe | iopromide | IA | 475 | myocardial infarction | coronary | 66 | 23 | Major cardiac adverse events  Cardiac death  Reinfarction  Hospitalization for heart failure  In-hospital death  In-hospital dialysis | 18/236  8/236  6/236  1/236  7/236  0/236 | 13/239  11/239  5239  2/239  9/239  2/239 | 0.37  0.50  0.77  1.00  0.62  0.49 | 30 d  30 d  30 d  30 d  < 24 hr  <24 hr | NS\* | L |
| Chuang15 | Asia | iohexol | IV | 50 | renal impairment or diabetes | IVU | 58 | 32 | Total allergic reactions  Early reaction  Burning in throat  Dizziness  Late reactions  Skin rash | 2/25  0/25  0/25  0/25  2/25  2/25 | 6/25  3/25  1/25  2/25  3/25  3/25 | 0.24  0.23  1  1  1  1 | < 1 h to 7 d  < 1 hr  < 1 h to 7 d  < 1 h to 7 d  >1hr to 7 d  < 1 h to 7 d | NS | H |
| Hardiek10 | N. America | iopamidol | IA | 106 | diabetes | coronary | 66 | 83 | Nausea  Fever  Rash  ARF | 2/54  0/54  4/54  0/54 | 2/48  2/54  1/54  1/54 | NR  NR  5-7 d  NR | NR  NR  NR  NR | NR | L |
| Jo18 | Asia | ioxaglate | IA | 275 | renal impairment | coronary | 67 | 44 | Composite† | 3/140 | 3/135 | NR | NR | NR | M |
| Juergens2 | Australia | iopromide | IA | 382 | renal impairment | coronary | 70 | 24 | Multiple AEs | NR | NR | NS | NR | NS | L |
| Laskey12‡ | Europe  Asia | iopamidol | IA | 418 | renal impairment and diabetes | coronary | 70 | 35 |  | NR | NR | NR | NR | NR | M |
| Mehran13 | N. America | ioxaglate | IA | 146 | renal impairment | coronary | 71 | 12 | Adverse events§ | 0/72 | 4/74 | 0.12 | Up to 30 d | NS | M |

**Evidence Table E-10. Comparison between iso- and low-osmolar contrast media: adverse events (continued)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author**  **year** | **Location** | **LOCM** | **Route** | **N** | **Population** | **Procedure** | **Mean age**  **y** | **Fe-males**  **%** | **Adverse event** | **IOCM group** | **LOCM group** | **P value** | **Follow-up** | **Primary result** | **Risk of bias** |
| Nie17 | Asia | iopromide | IA | 208 | renal impairment | coronary | 61 | 32 | Composite¶  Emergent PCI  Abrupt vessel closure  Stroke  Thombosis  Cardiac death  Nonfatal MI  CABG | 2/106  0/106  1/106  0/106  1/106  0/106  0/106  0/106 | 9/102  2/102  2/102  1/102  3/102  0/102  1/102  0/102 | 0.025  0.24  0.61  0.49  0.36  --  0.49  -- | 30 d  In hosp  In hosp  In hosp  In hosp  In hosp  In hosp  In hosp | pos | M |
| Semerci, 2014[26](#_ENREF_26) | Asia | Iopamidol | IA | 38 | no renal impairment | Coronary | 56 | 32 | NR | NR | NR | NR | NR | NS |  |
| Shin20 | Asia | iopromide | IA | 420 | renal impairment | coronary | 72 | 46 | Major adverse cardiac events | 5/215 | 4/205 | NR | 30 d | NS | L |
| Solomon5║ | N. America | iopamidol | IA | 414 | renal impairment | coronary | 71 | 36 |  |  |  |  |  | NR | M |
| Wessely14 | Europe | iomeprol | IA | 324 | renal impairment | coronary | 74 | 31 | MI and death\*\* | NR | NR | NS | 6m | NR | M |
| Zo'o22 | Europe | iobitridol | IV | 145 | children | CT | 8 | 41 | Pts with at least 1 AE  Serious AEs | 17/71  4/71 | 16/74  5/74 | NR  NR | 10 d | NR | L |

CIN = contrast-induced nephropathy; CT=computerized tomography; CV=cardiovascular; H=High risk of bias; HF=heart failure; IA = intra-arterial; IOCM-iso-osmolar contrast media; ITT=intention to treat; IV = intravenous; IVU = intravenous urography; L=low risk of bias; LOCM = low-osmolar contrast media; MI=myocardial infarction; M-moderate risk of bias; NA = not applicable; NR = not reported; NS = not significant; PCI=percutaneous coronary intervention; PP=protocol population; Pts=patients; RRT = renal replacement therapy

\*Treatment groups were pooled to assess the effect of CI-AKI on major cardiac events. The incidence of major cardiac events was significantly different between paitients with and without CI-AKI (p=0.001)

‡death, myocardial infarction, revascularization, cerebral infarction, dialysis. Adverse events were reported but not stratified by CM but by ITT or PP study groups. No conclusions can be made

§Nodifference between groups for death, myocardial infarction and repeat revascularization

¶Composite of CVevents in-hospital and 30 days post discharge and diagnostic image quality.

║ Most AEs were non-serious and resolved themselves—no statistics provided

\*\* rates reported as similar