**Evidence Table E-12. Summary of observational studies comparing contrast media for the prevention of contrast-induced nephropathy**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year** | **Comparison** | **N** | **Population** | **Age, range of mean**§ | **CM**  **Route\*** | **Mean follow up** | **Definition of CIN\*** | **Incidence of CIN, n/N (%)** | **Other Outcomes, n/N (%)** |
| Ajami, 2010[33](#_ENREF_33) | Iopromide vs Iohexol | 80 | Pediatric patients | 8.7 | IA | 48 hours | Increased creatinine x 1.5 or GFR decrease >25% at 48 hours | Iopromide: 5/40 (12.5)  Iohexol: 3/40 (7.5)  p=0.0001 | NR |
| Briguori, 2005[34](#_ENREF_34) | Iobitridol vs Iodixanol | 225 | SrCr >1.5mg/dl or GFR <60ml/min/1.73m2 | 67 | IA | 48 hours | >0.5 mg/dl of SrCr | Iobitridol: 4/115 (3.5)  Iodixanol: 3/110 (2.7)  p=1.00 | Requiring dialysis  At 48 hours  Iobitridol: 0 (0)  Iodixanol: 0 (0)  p=NR |
| Donadio, 2001[35](#_ENREF_35) | Iopromide vs Ioversol vs Ioxaglate | 45 | Cardiac patients | 62-64 | IA | 72 hours | NR | NR | GFR <50% of baseline  At 48 hours  0 participants in all arms, p=NR |
| From, 2008[36](#_ENREF_36) | Iodixanol vs Iohexol | 794 | General | 69 | IV | 2 years | >25% or >0.5 mg/dl of SrCr | At 7 days  Iodixanol: 54/397 (10.7)  Iohexol: 52/397 (10.3)  p=0.84 | Requiring dialysis  Iodixanol: 1/397 (0.3)  Iohexol: 0/397 (0)  p=NR  Mortality  Average time to event: 1.2 years  Iodixanol: 87/397 (22)  Iohexol: 103/397 (26)  p=0.18 |
| Hsieh, 2006 [37](#_ENREF_37) | Iodixanol vs Iopromide | 54 | SrCr >2.5mg/dl | 71-73 | IA | 6 months | NR | NR | change inSrCr (%)  At 6 months  Iopromide: +47  Iodixanol: -10  p<0.001  Requiring dialysis  At 1 year  Iopromide: 1/27 (4%)  Iodixanol: 4/27 (15)  p=NS |

**Evidence Table E-12. Summary of observational studies comparing contrast media for the prevention of contrast induced nephropathy (continued)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year** | **Comparison** | **N** | **Population** | **Age, range of mean**§ | **CM**  **Route\*** | **Mean follow up** | **Definition of CIN\*** | **Incidence of CIN, n/N (%)** | **Other Outcomes, n/N (%)** |
| Kanei, 2011[38](#_ENREF_38) | Iodixanol vs Iopamidol | 212 | STEMI | 59.6 | IA | 72 hours | >25% or >0.5 mg/dl of SrCr | At 72 hours  Iodixanol: 20/121 (17)  Iopamidol: 13/91 (14)  p=0.80 | Composite of adverse cardiac events (death, AMI and target vessel revascularization)  At 72 hours  Iodixanol: 6/121 (5.0)  Iopamidol: 2/91 (2.2)  p=0.47  Length of hospital stay (days)  Iodixanol: 9.4  Iopamidol: 6.9  p=0.08 |
| Karlsberg, 2010[39](#_ENREF_39) | Iodixanol vs LOCM | 275 | General | 64 | IA | 24 hours | >25% of SrCr | At 24 hours  Iodixanol: 8/147 (5.4)  LOCM: 14/103 (13.6)  p=0.025 | Heart Failure  At 24 hours  Iodixanol: 1/147 (0.68)  LOCM: 1/103 (0.97)  p=NR |
| LaBounty, 2012 [40](#_ENREF_40) | Iohexol vs Iopamidol vs Ioversol | 107,994 | General | 45% >65 years | IA | 30 days | NR | Re-admission for CIN  At 30 days  Iohexol: (0.1)  Iopamidol: (0.1)  Ioversol: (0.1)  p=0.77 | In-hospital mortality  Iohexol: (0.6)  Iopamidol: (0.7)  Ioversol: (0.7)  p=0.17  In-hospital hemodialysis  Iohexol: (0.34)  Iopamidol: (0.48)  Ioversol: (0.49)  p=0.02  Hospital length of stay (days)  Iohexol: 2.8  Iopamidol: 3.0  Ioversol: 2.9  p<0.001 |
| Liss, 2006[41](#_ENREF_41) | Iodixanol vs Ioxaglate | 57,925 | General | 65 | IA | 3 months | NR | Renal failure diagnosis  At 3 months  Iodixanol: 141/45485 (0.3)  Ioxaglate: 10/12440 (0.1)  p<0.001 | Started dialysis  At 3 months  Iodixanol: 79/45485 (0.2)  Ioxiglate: 9/12440 (0.1)  p=0.010 |

**Evidence Table E-12. Summary of observational studies comparing contrast media for the prevention of contrast induced nephropathy (continued)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year** | **Comparison** | **N** | **Population** | **Age, range of mean**§ | **CM**  **Route\*** | **Mean follow up** | **Definition of CIN\*** | **Incidence of CIN, n/N (%)** | **Other Outcomes, n/N (%)** |
| Valente, 2006[42](#_ENREF_42) | Iodixanol vs Iopromide | 194 | STEMI | 73-78 | IA | 1 month | >0.5 mg/dl of SrCr | At 72 hours  Iodixanol: 15/67 (22.3)  Iopromide: 6/127 (4.7)  p<0.05 | Mortality  At 1 month  4 deaths total (2.31%), all developed CIN  Chronic renal failure  At 1 month  1 developed renal failure from all arms |

%=percent; AMI=acute myocardial infarction; CIN=contrast induced nephropathy; CM=contrast media; GFR=glomerular filtration rate; IA=intra-arterial; LOCM=low-osmolar contrast media; mg/dl=milligram per deciliter; ml/min/1.73m2=millimeter per minute per 1.73 meter squared; n=number of events; N=total sample size; NR=not reported; NS=not significant; p=p-value; SrCr=serum creatinine; STEMI= ST-elevated myocardial infarction