**Evidence Table E-21. Summary of other outcomes reported in studies of statins plus IV fluids versus IV fluids with or without placebo for the prevention of contrast-induced nephropathy**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author, yr** | **Comparisons** | **Mortality, n/N (%)** | **Need for RRT, n/N (%)** | **Other events, n/N (%)** |
| Abaci, 2015[1](#_ENREF_1) | IV normal saline v risovustatin + IV normal saline | NR | NR | Composite outcome: death, nonfatal myocardial infarction, ischemic cerebrovascular accidents, and a decrease in eGFR of \_25% or renal failure requiring dialysis, as well as the incidence of the individual components of this composite outcome  NS across groups |
| Acikel, 2010[2](#_ENREF_2) | Arm1: IV Normal Saline  Arm2: IV Normal Saline + Oral Atorvastatin Arm3: IV Normal Saline + Chronic Statin Therapy (non-randomized group) | NR | NR | NR |
| Han, 2013[43](#_ENREF_43) | Arm1: Low-dose Oral Atorvastatin + Oral Probucol  Arm2: High-dose Oral Atorvastatin + Oral Probucol  Arm3: High-dose Oral Atorvastatin | NR | Need for Dialysis  At 48 hours  Arm1: 0/54 (0)  Arm2: 0/73 (0)  Arm3: 0/93 (0)  p=NR | NR |
| Han, 2014[44](#_ENREF_44) | Arm 1: IV normal saline  Arm 2: Rosuvastatin + IV normal saline | At 30 days, all cause:  Arm1: 5/1500 (.3)  Arm2: 3/1498 (.2)  P=0.73 | At 30 days:  Arm1: 2/ 1500 (0.1)  Arm2: 0/1498  P=0.5 | Worsening heart failure:  Arm1: 64/1500 (4.3)  Arm2: 39/1498 (2.6)  P=0.02 |
| Jo, 2008[51](#_ENREF_51) | Arm 1:Placebo + 0.45% saline  Arm 2: simvastatin + 0.45% saline | NR | At 3 days:  Arm1: 1/118 (.8)  Arm2: 0/118  P=NRf | Length of stay:  Arm1: 5.1 days  Arm2: 4.5 days  P=0.39  Composite outcome:  Arm1: 5/123 (4.1)  Arm2: 3/124 (2.4)  P=0.498c |

**Evidence Table E-21. Summary of other outcomes reported in studies of statins plus IV fluids versus IV fluids with or without placebo for the prevention of contrast-induced nephropathy (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author, yr** | **Comparisons** | **Mortality, n/N (%)** | **Need for RRT, n/N (%)** | **Other events, n/N (%)** |
| Jo, 2014[53](#_ENREF_53) | Arm1: Regular Atorvastatin dose  Arm2: High Atorvastatin dose | At 1 month, overall deaths:  Arm1: 1/108 (1.0)  Arm2: 2/110 (2.1)  p=NR  At 6 months, overall deaths:  Arm1: 2/108 (2.2)  Arm2: 3/110 (3.1)  p=NR | Dialysis, at 1 month:  Arm1: 0/108 (0)  Arm2: 0/110 (0)  p=NR  Dialysis, at 6 months:  Arm1: 0/108 (0)  Arm2: 0/110 (0)  p=NR | Heart Failure, at 1 month  Arm1: 2/108 (2)  Arm2: 0/110 (0)  p=NR  Heart Failure, at 6 months  Arm1: 3/108 (3.3)  Arm2: 0/110 (0)  p=NR  Target revascularization (TVR), at 1 month  Arm1: 1/108 (1)  Arm2: 0/110 (0)  p=NR  Target revascularization (TVR), at 6 months  Arm1: 2/108 (2.2)  Arm2: 0/110 (0)  p=NR  Myocardial Infarction, at 1 month:  Arm1: 0/108 (0)  Arm2: 0/110 (0)  p=NR  Myocardial Infarction, at 6 months:  Arm1: 0/108 (0)  Arm2: 0/110 (0)  p=NR |
| Kaya, 2013[56](#_ENREF_56) | Arm1: Oral Atorvastatin + IV Normal Saline Arm2: Oral Rosuvastatin + IV Normal Saline | NR | NR | NR |
| Leoncini, 2014[71](#_ENREF_71) | Arm1: No Rosuvastatin  Arm2: Rosuvastatin | At 30 days, overall deaths:  Arm1: 3/252 (1.2)  Arm2: 2/252 (0.8)  p=0.9 | Dialysis, at 30 days:  Arm1: 2/252 (0.8)  Arm2: 0/252 (0)  p=0.5 | Myocardial Infarction, at 30 days:  Arm1: 5/22 (2)  Arm2: 2/252 (0.8)  p=0.45 |
| Li, 2012 [72](#_ENREF_72) | Arm 1: Placebo + IV normal saline  Arm 2: Atorvastatin + IV normal saline | NR | NR | Elevated ALT:  Arm1: NR (1.2)  Arm2: NR (3.85)  P=0.57 |

**Evidence Table E-21. Summary of other outcomes reported in studies of statins plus IV fluids versus IV fluids with or without placebo for the prevention of contrast-induced nephropathy (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author, yr** | **Comparisons** | **Mortality, n/N (%)** | **Need for RRT, n/N (%)** | **Other events, n/N (%)** |
| Li, 2014[73](#_ENREF_73) | Arm1: Standard Atorvastatin + Probucol  Arm2: Large Atorvastatin + Probucol dose  Arm3: Large Atorvastatin dose | NR | NR | NR |
| Liu, 2014[74](#_ENREF_74) | Rosuvastatin vs Atorvastatin | No differenc p=0.141 | No difference )p=0.63 | HF: no difference |
| Ozhan, 2010[88](#_ENREF_88) | Arm 2: NAC + IV normal saline  Arm 3: NAC + Atorvastatin +IV normal saline | NR | NR | NR |
| Patti, 2011[89](#_ENREF_89) | Arm 1: Placebo  Arm 2: Atorvastatin | NR | NR | Length of stay:b  Arm1: 3.2 +/-.8 days  Arm2: 2.9 +/-.9 days  P=0.007  Acute renal failure  Arm1: 1/121 (0.8)  Arm2: 0/120 (0)  P=nr |
| Qiao, 2015[91](#_ENREF_91) | NR | NR | NR | NR |
| Quintavalle, 2012[92](#_ENREF_92) | Arm 2: NAC+ IV NaHCO3  Arm 3: Atorvastatin + NAC + IV NaHCO3 | At 1 year, whole population: 29/402(7) | At 1 year, whole population: 8/402(2) | Majpr adverse events (not defined)  At 24 hours post procedure  9/45 (20) patients with CIAKI  28/357 (7.8) patients without CIAKI |
| Sanei, 2014[98](#_ENREF_98) | Placbo vs Atorvastatin | NR | NR | NR |
| Shehata, 2015[102](#_ENREF_102) | NR | NR | None required in either group | Cardiac: none reported in either group |
| Toso, 2010[109](#_ENREF_109) | Arm 1: Placebo + IV normal saline + NAC  Arm 2: atorvastatin + IV normal saline + NAC | Arm1: 0/152 (0)  Arm2: 1/152 (0.6)  P=NR | Arm1: 1/152 (0.6)  Arm2: 0/152 (0)  P=NRf | NR |
| Xinwei, 2009[116](#_ENREF_116) | Arm 2: Simvastatin 20mg + IV normal saline  Arm 3: Simvastatin 80mg + IV normal saline | NR | NR | Acute renal failure at 24 hours:  Arm1: 1/115  Arm2: 0/113  P=NR |
| Yun, 2014[118](#_ENREF_118) | Iv saline vs Rosuvatatin + IV saline | NR | NR | NR |
| Zhang, 2015[119](#_ENREF_119) | NR | NR | NR | NR |

**Evidence Table E-21. Summary of other outcomes reported in studies of statins plus IV fluids versus IV fluids with or without placebo for the prevention of contrast-induced nephropathy (continued)**

%=percent; ALT=alanine aminotransferase**;** CIN=contrast induced nephropathy; Mg/dl=milligram per deciliter; Mg=milligram; Cr= creatinine; N=sample size; NAC=N-acetylcysteine; NaHCo3=sodium bicarbonate; NR=not reported; NS=normal saline; P=p-value; RRT=renal replacement therapy; vs.=versus

\* p values associated with chi square tests unless otherwise specified

† Specific error estimation, mean (standard error) vs. mean (standard deviation), not reported

‡ Fisher’s exact

§ Multiple comparisons (% placebo vs. % simvastatin) reported: non diabetes, (1.1 vs. 1.2, p value=1.0); Dose of CM>140 ml, (6.0 vs. 1.7, p value=.369); dose of CM< 140ml, (0 vs. 4.1, p value=.498); LVEF<40 ml, (2 vs. 0, p value=.476); LVEF>40%(18.2 vs. 0, p value=1.0 ); Age>75 years, (6.3 vs. 6.3, p value=1.0); Age < 75 y, (2.9 vs. 2.0, p value=.068)

¶ Composite outcome of death, myocardial infarction, revascularization, cerebral infarction, and dialysis fdefined as NYHA classification (class change >1)

║ Fisher’s exact calculated as p value=1.0 for both comparisons

n/N refers to number of events divided by number at risk.