SUPPLEMENTAL DIGITAL CONTENT 17

This table also appears in the Supplemental Digital Content 2 in the complete set of evidence tools.

Table 73. Selenium supplement compared to no selenium in sepsis or septic shock

Author(s): Jones A, Alhazzani W
Date: April 13, 2016
Question: Selenium supplement compared to no selenium in sepsis or septic shock
Setting: ICU
Bibliography: Alhazzani W, Jacobi J, Sindi A, Hartog C, Reinhart K, Kokkoris S, Gerlach H, Andrews P, Drabek T, Manzanares W, Cook DJ. The effect of selenium therapy on mortality in patients with sepsis syndrome: a systematic review and meta-analysis of randomized controlled trials. Critical care medicine. 2013 Jun 1;41(6):1555-64.; Bloos F, Trips E, Nierhaus A, Briegel J, Heyland DK, Jaschinski U, Moerer O, Weyland A, Marx G, Gründling M, Kluge S. Effect of Sodium Selenite Administration and Procalcitonin-Guided Therapy on Mortality in Patients With Severe Sepsis or Septic Shock: A Randomized Clinical Trial. JAMA internal medicine. 2016 Sep 1;176(9):1266. (unpublished)

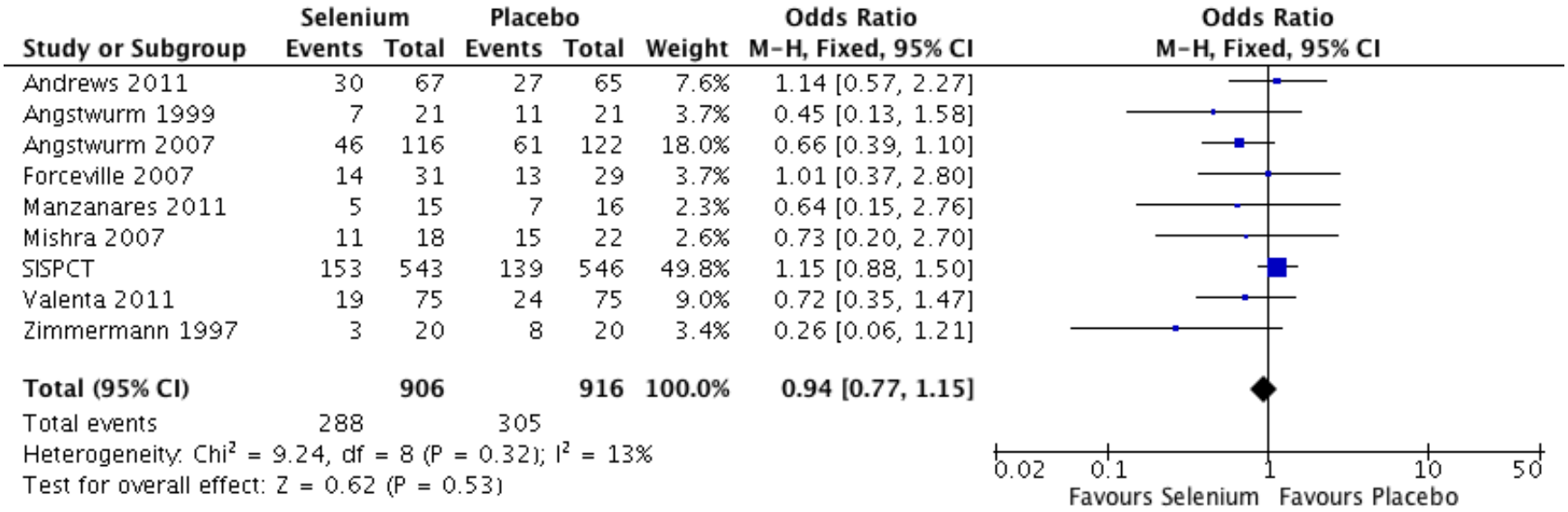
Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Selenium supplement**	**no selenium**	**Relative (95% CI)**	**Absolute (95% CI)**		
Mortality (hospital or if not reported ICU/28 days mortality)												
10	randomized trials	serious [1]	not serious	not serious	serious [2]	none	288/906 (31.8%)	305/916 (33.3%) [3]	**OR 0.94** (0.77 to 1.15)	**14 fewer per 1000** (from 32 more to 55 fewer)	⨁⨁◯◯ LOW	CRITICAL
								20.0%		**10 fewer per 1000** (from 23 more to 39 fewer)		
Mortality (Low RoB Trials)												

3	randomized trials	not serious	not serious	not serious	serious [4]	none	197/641 (30.7%)	179/640 (28.0%)	**OR 1.14** (0.89 to 1.45)	**27 more per 1000** (from 23 fewer to 81 more)	⊕⊕⊕◯ MODERATE	CRITICAL
Nosocomial Pneumonia												
3	randomized trials	serious [5]	not serious [6]	not serious	very serious [7]	none	28/135 (20.7%)	28/136 (20.6%)	**OR 0.83** (0.28 to 2.49)	**29 fewer per 1000** (from 138 fewer to 186 more)	⊕◯◯◯ VERY LOW	IMPORTANT
								10.0%		**16 fewer per 1000** (from 70 fewer to 117 more)		
ICU length of stay												
3	randomized trials	serious [5]	not serious	not serious	serious [8]	none	668	681	-	MD **0.12 days lower** (1.42 lower to 1.17 higher)	⊕⊕◯◯ LOW	IMPORTANT

MD – mean difference, RR – relative risk

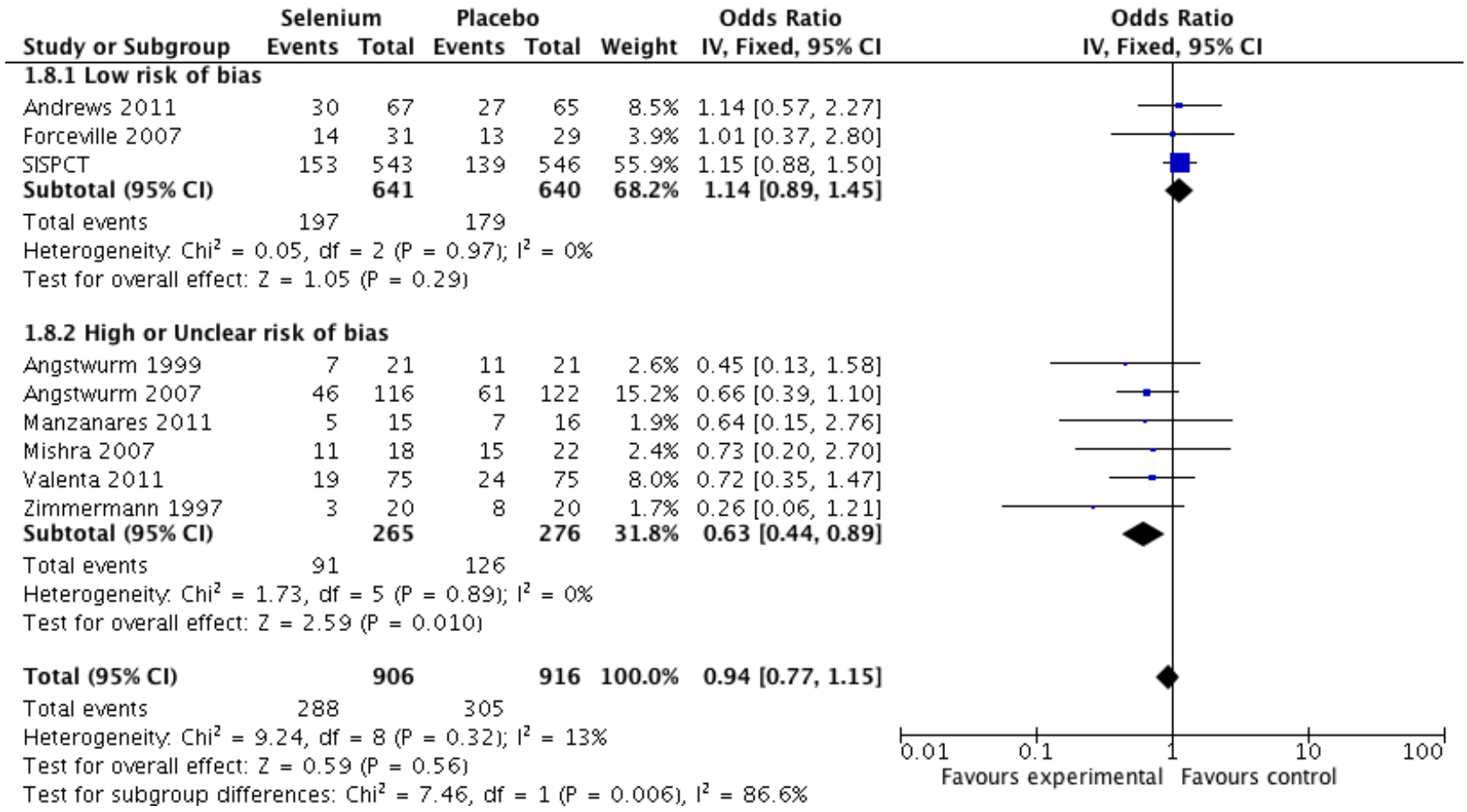
1. We downgraded the quality of evidence by one level for risk of bias, three studies were at high risk of bias, mainly due to lack of blinding (detection and performance biases) and incomplete outcome data (attrition bias), and four studies were classified as unclear risk of bias.
2. We downgraded the quality of evidence by one level for imprecision, the results were sensitive to the metric used to summarize the results, if RR is used the UL of CI reaches 1, therefore we decided to lower the quality of evidence
3. estimates of mortality from sepsis is approximately 20% (Kaukonen KM, Bailey M, Suzuki S, Pilcher D, Bellomo R. Mortality related to severe sepsis and septic shock among critically ill patients in Australia and New Zealand, 2000-2012. JAMA. 2014;311(13):1308-16.)
4. We downgraded the quality of evidence for imprecision by one level, the CI contained small benefit but significant harm (45% relative risk increase in mortality)
5. We downgraded the quality if evidence for risk of bias by one level.
6. Although I^2 = 50% we did not downgrade for imprecision, because we downgraded for other categories
7. We downgraded the quality of evidence by two levels for imprecision, the CI was very wide including substantial benefit and harm
8. We downgraded the quality of evidence for imprecision by one level

Figure 61. Selenium compared to placebo in septic patients: Mortality Outcome



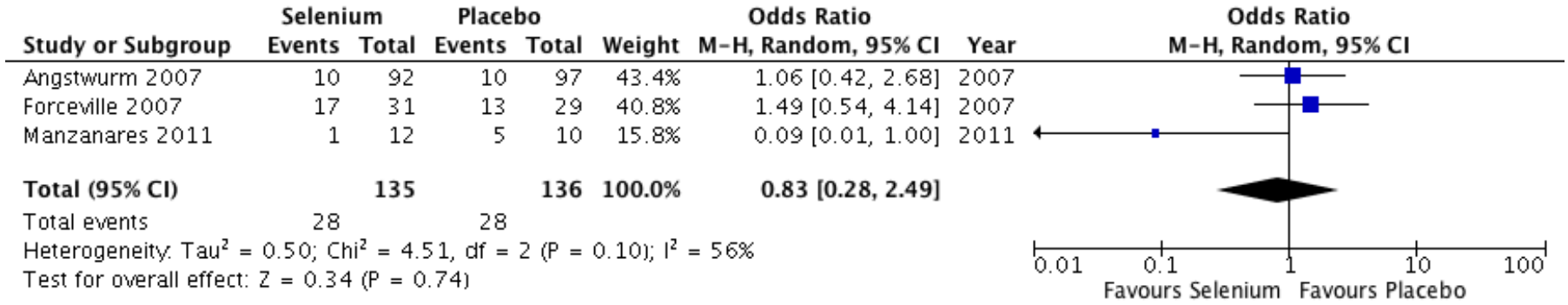
M-H: Mantel-Haenszel

Figure 62. Selenium compared to placebo in septic patients: Mortality Outcome Split by risk of bias of underlying studies.



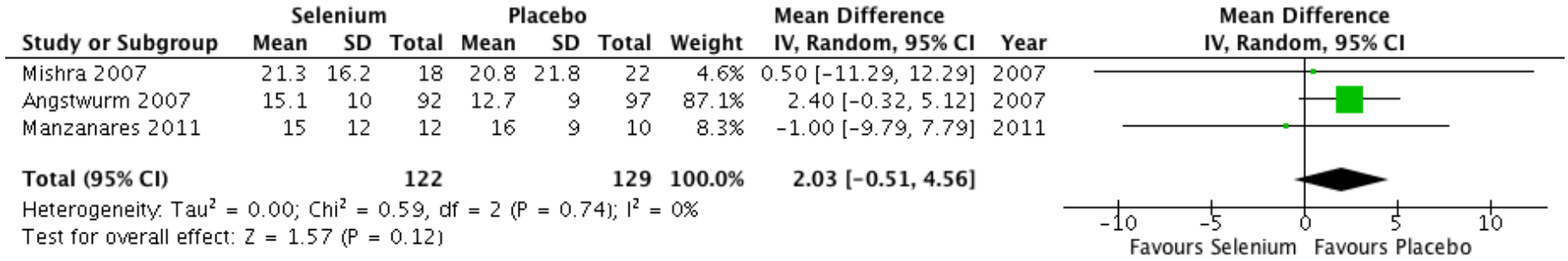
IV: Inverse variance

Figure 63. Selenium compared to placebo in septic patients: Pneumonia Outcome



M-H: Mantel-Haenszel

Figure 64. Selenium compared to placebo in septic patients: ICU length of stay Outcome



IV: Inverse variance