

Appendix 4: Outcomes for glycemic control, hypoglycemic events, and mortality in randomized trials included in this meta-analysis

First author, year	Intervention			Usual care			Mortality			Hypoglycemia†		
	Glucose target	Achieved glucose (SD or IQR)		Glucose target	Achieved glucose (SD or IQR)		Mortality outcome	Intervention deaths/total (%)	Control deaths/total (%)	Intervention events/total (%)	Control events/total (%)	
		Glucose target	Achieved glucose (SD or IQR)		Glucose target	Achieved glucose (SD or IQR)						
Arabi 2008 ¹⁰	4.4–6.1	6.4 (1.0)	10–11.1	9.5 (1.9)	Hospital	72 / 266 (27.1)	83 / 257 (32.3)	76 / 266 (28.6)	8 / 257 (3.1)			
Azevedo* 2007 ²²	4.4–6.7	7.4 (6.7–8.5)	< 10.0	8.0 (6.8–9.7)	ICU	38 / 168 (22.6)	42 / 169 (24.9)	27 / 168‡‡ (16.1)	6 / 169‡‡ (3.6)			
Bilotta 2007 ²⁴	4.4–6.7	5.0 (0.8)	< 12.2	8.3 (1.4)	6-month	6 / 40 (15.0)	7 / 38 (18.4)	38 / 40¶ (95.0)	24 / 38¶ (63.2)			
Bilotta 2008 ²³	4.4–6.7	5.1 (0.9)	< 12.2	8.2 (1.4)	6-month	5 / 48 (10.4)	6 / 49 (12.2)	48 / 48¶ (1.0)	48 / 49¶ (98.0)			
Bland 2005 ²⁵	4.4–6.1	5.8 (1.5)	10–11.1	9.8 (2.5)	28-day	1 / 5 (20.0)	2 / 5 (40.0)	1 / 5 (20.0)	1 / 5 (20.0)			
Brunkhorst 2008 ¹¹	4.4–6.1	6.2 (1.0)	10–11.1	8.4 (1.8)	90-day	98 / 247 (39.7)	102 / 288 (35.4)	42 / 247 (17.0)	12 / 290 (4.1)			
Bruno 2008 ²⁶	5.0–7.2	7.4 (0.9)	< 11.1	10.6 (3.6)	90-day	2 / 31 (6.5)	0 / 15 (0)	11 / 31¶ (35.5)	0 / 15¶ (0)			
De La Rosa 2008 ¹²	4.4–6.1	6.5 (5.6–7.8)	10–11.1	8.2 (6.8–10.0)	Hospital	102 / 254 (40.2)	96 / 250 (38.4)	21 / 254 (8.3)	2 / 250 (0.8)			
Devos* 2007 ¹³	4.4–6.1	6.6 (6.1–7.3)	7.8–10.0	8.2 (7.1–9.2)	Hospital	107 / 550‡ (19.5)	89 / 551‡ (16.2)	54 / 550 (9.8)	15 / 551 (2.7)			
Farah 2007 ²⁷	6.1–7.8	7.9 (0.8)	7.8–11.1	9.7 (1.1)	28-day	22 / 41 (53.7)	22 / 48 (45.8)	NR	NR			
Grey 2004 ²⁸	4.4–6.7	6.9 (2.0)	10–12.2	9.9 (3.4)	Hospital	4 / 34 (11.8)	6 / 27 (22.2)	11 / 34¶ (32.4)	2 / 27¶ (7.4)			
He, W 2007 ²⁹	4.4–8.3§	6.7 (0.7)§	10–11.1	10.0 (0.8)	Hospital	7 / 150 (4.7)	6 / 38 (15.8)	NR††	NR††			
He, Z 2008 ³⁰	4.4–6.1	5.1 (0.6)	10–11.1	10.6 (0.5)	ICU	16 / 58 (27.6)	29 / 64 (45.3)	3 / 58¶ (5.2)	3 / 64¶ (4.7)			
Henderson* 2005 ³¹	4.0–7.0	6.2 (1.2)	9.0–11.0	8.3 (1.6)	Hospital	5 / 32 (15.6)	7 / 35 (20.0)	7 / 32 (21.9)	1 / 35 (2.9)			
Iapichino** 2008 ³²	4.4–6.1	6.1 (1.0)	10–11.1	9.1 (1.6)	90-day	15 / 45 (33.3)	12 / 45 (26.7)	8 / 45 (17.8)	3 / 45 (6.7)			
Mackenzie 2008 ³³	4.0–6.0	7.0 (2.4)	< 11.0	8.4 (2.4)	Hospital	39 / 121 (32.2)	47 / 119 (39.5)	50 / 121 (41.3)	9 / 119 (7.6)			
McMullin 2007 ³⁴	5.0–7.0	7.1 (2.6)	8.0–10.0	9.4 (2.1)	Hospital	6 / 11 (54.5)	4 / 9 (44.4)	4 / 11¶ (36.4)	1 / 9¶ (11.1)			
Mitchell 2006 ³⁵	4.4–6.1	5.4 (5.1–5.7)	10–11.1	7.9 (7.2–9.0)	Hospital	9 / 35 (25.7)	3 / 35 (8.6)	5 / 35 (14.3)	0 / 35 (0)			
NICE-SUGAR 2009 ¹⁸	4.5–6.0	6.4 (1.0)	< 10.0	8.0 (1.3)	90-day	829 / 3010 (27.5)	751 / 3012 (24.9)	206 / 3016 (6.8)	15 / 3014 (0.5)			
Oksanen 2007 ³⁶	4.0–6.0	5.0 (4.5–5.8)	6.0–8.0	6.4 (5.5–7.4)	30-day	13 / 39 (33.3)	18 / 51 (35.3)	7 / 39 (17.9)	1 / 51 (2.0)			
Van den Berghe 2001 ⁸	4.4–6.1	5.7 (1.1)	10–11.1	8.5 (1.8)	Hospital	55 / 765 (7.2)	85 / 783 (10.6)	39 / 765 (5.1)	6 / 783 (0.8)			
Van den	4.4–6.1	6.2 (1.6)	10–11.1	8.5 (1.7)	90-day	214 / 595 (36.0)	228 / 605 (37.7)	111 / 595 (18.7)	19 / 605 (3.1)			

Appendix to: Griesdale DEG, de Souza RJ, van Dam RM, et al. Intensive insulin therapy and mortality among critically ill patients: a meta-analysis including NICE-SUGAR study data. *CMAJ* 2009;180. DOI: 10.1503/cmaj.090206.
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Berghe 2006 ^a													
Walters 2006 ³⁷	5.0–8.0	6.9	(1.9)	< = 15.0	8.1	(2.0)	30-day	1 / 13	(7.7)	0 / 12	(0)	NR	NR
Wang, L 2006 ³⁸	4.4–6.1	5.5	(3.8)	10–11.1	10.3	(1.4)	ICU	7 / 58	(12.1)	26 / 58	(44.8)	6 / 58 ^{‡‡}	(10.3)
Yu 2005 ³⁹	4.4–6.1	5.7	(1.2)	10–11.1	11.1	(1.6)	Hospital	4 / 28	(14.3)	4 / 27	(14.8)	3 / 28 ^{¶¶}	(10.7)
Zhang 2008 ⁴⁰	4.4–6.1	6.1	(0.5)	10–11.1	7.7	(0.7)	Hospital	4 / 168	(2.4)	6 / 170	(3.5)	3 / 168 ^{¶¶}	(1.8)
												1 / 170 ^{¶¶}	(0.6)

Note: SD = standard deviation, IQR = interquartile range, NR = not reported in manuscript or unclear definition used for hypoglycemia, ICU = intensive care unit

*published abstract

†defined as glucose \leq 2.2 mmol / L unless otherwise noted

‡data obtained from Wiener meta-analysis

§original study randomized into three levels of glycemic control(4.4–6.1 mmol/L, 6.7–8.3 mmol/L and 10–11.1 mmol/L). Because of our a priori inclusion criteria of target glucose \leq 8.3 mmol / L, we combined the first two levels for the purpose of comparison.

¶hypoglycemia level not \leq 2.2 mmol / L. Bilotta 2007 & 2008 (\leq 4.4 mmol / L), Bruno 2008 (\leq 3.3 mmol / L), Grey 2004 (\leq 3.3 mmol / L), He Z 2008 (\leq 3.5 mmol / L), McMullin 2007 (\leq 2.5 mmol / L), Oksanen 2007 (\leq 3.3 mmol/L), Yu 2005 (\leq 2.8 mmol / L) , Zhang 2008 (\leq 3.3 mmol / L)

**original study excluded 9 patients per group post-randomization who did not survive at least 3 days(total patients in published study 72). Author contacted and outcomes obtained for those patients for total no. of patients included in this analysis is 90.

††rate of hypoglycemia(\leq 3.3 mmol / L) reported per number of measurements. Target 4.4–6.1(0.94%), 6.7–8.3(0.24%), 10–11.1(0.20%).

‡‡hypoglycemic events reported in published abstract and definition confirmed using Wiener meta-analysis