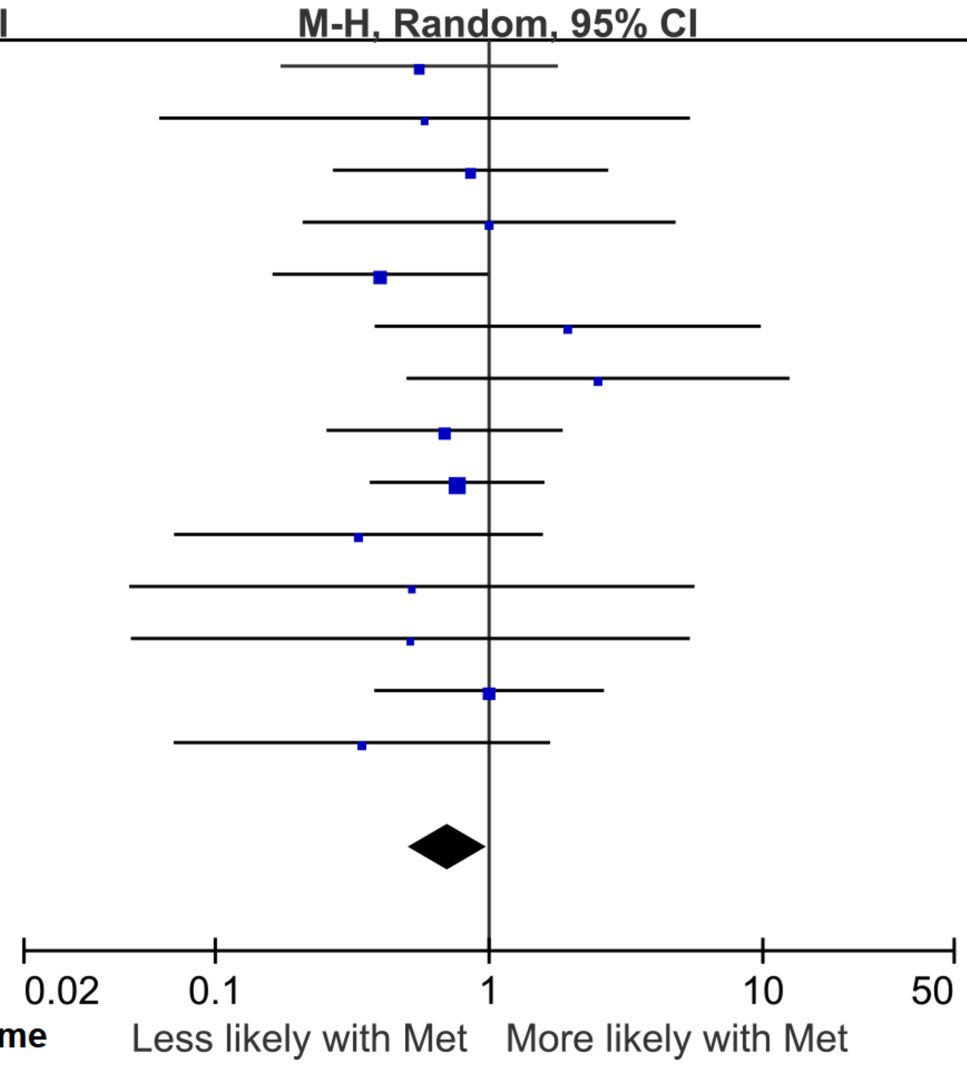
A

Study or Subgroup	Metformin Events	Metformin Total	Insulin Events	Insulin Total	Weight	Risk Ratio M-H, Random, 95% CI
Abdullah2021	4	90	8	100	8.0%	0.56 [0.17, 1.78]
Ainuddin2014	1	43	3	75	2.2%	0.58 [0.06, 5.42]
Eid2018	5	113	6	116	8.1%	0.86 [0.27, 2.72]
Hassan2012	3	75	3	75	4.4%	1.00 [0.21, 4.80]
Mesdaghinia2013	6	100	15	100	13.3%	0.40 [0.16, 0.99]
Moore2007	4	32	2	31	4.1%	1.94 [0.38, 9.83]
Niromanesh2012	5	80	2	80	4.2%	2.50 [0.50, 12.51]
Picón-César2021	6	94	9	97	11.0%	0.69 [0.25, 1.86]
Roman2008	12	363	16	370	20.2%	0.76 [0.37, 1.59]
Ruholamin2014	2	50	6	50	4.5%	0.33 [0.07, 1.57]
Saleh2016	1	67	2	70	1.9%	0.52 [0.05, 5.63]
Somani2016	1	32	2	33	2.0%	0.52 [0.05, 5.41]
Spaulonci2013	7	47	7	47	11.7%	1.00 [0.38, 2.63]
Wasim2019	2	137	6	141	4.3%	0.34 [0.07, 1.67]
Total (95% CI)		**1323**		**1385**	**100.0%**	**0.71 [0.51, 0.99]**
Total events	59		87			

Heterogeneity: Tau² = 0.00; Chi² = 8.23, df = 13 (P = 0.83); I² = 0%
Test for overall effect: Z = 2.05 (P = 0.07)

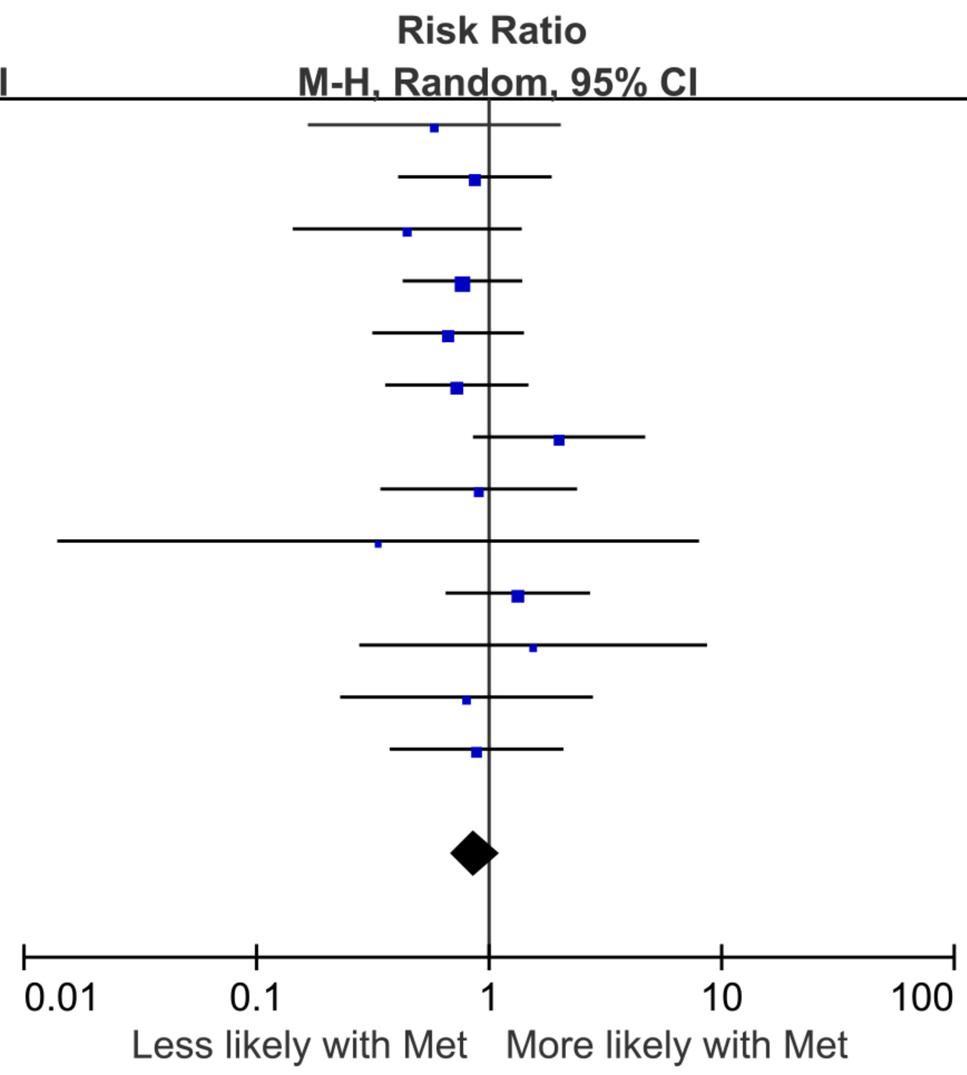


Respiratory distress syndrome

B

Study or Subgroup	Metformin Events	Metformin Total	Insulin Events	Insulin Total	Weight	Risk Ratio M-H, Random, 95% CI
Ainuddin2014	3	43	9	75	3.9%	0.58 [0.17, 2.03]
Eid2018	11	113	13	116	10.4%	0.87 [0.41, 1.86]
Hassan2012	4	75	9	75	4.7%	0.44 [0.14, 1.38]
Ijas2010	13	47	18	50	17.2%	0.77 [0.43, 1.39]
Mesdaghinia2013	10	100	15	100	10.7%	0.67 [0.31, 1.41]
Moore2007	9	32	12	31	12.0%	0.73 [0.36, 1.48]
Niromanesh2012	14	80	7	80	8.3%	2.00 [0.85, 4.69]
Picón-César2021	7	94	8	97	6.4%	0.90 [0.34, 2.39]
Ruholamin2014	0	50	1	50	0.6%	0.33 [0.01, 7.99]
Saleh2016	14	67	11	70	11.8%	1.33 [0.65, 2.72]
Somani2016	3	32	2	33	2.0%	1.55 [0.28, 8.65]
Spaulonci2013	4	47	5	47	3.9%	0.80 [0.23, 2.80]
Tertti2013	9	109	10	107	8.2%	0.88 [0.37, 2.09]
Total (95% CI)		**889**		**931**	**100.0%**	**0.88 [0.69, 1.12]**
Total events	101		120			

Heterogeneity: Tau² = 0.00; Chi² = 8.46, df = 12 (P = 0.75); I² = 0%
Test for overall effect: Z = 1.06 (P = 0.29)

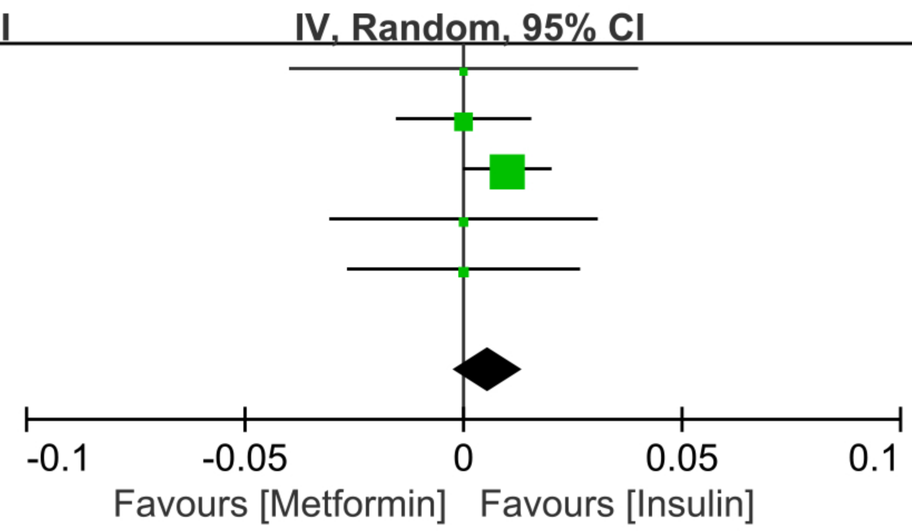


Hyperbilirubinamia

C

Study or Subgroup	Metformin Mean	Metformin SD	Metformin Total	Insulin Mean	Insulin SD	Insulin Total	Weight	Mean Difference IV, Random, 95% CI
Ijas2010	7.25	0.09	32	7.25	0.09	50	3.7%	0.00 [-0.04, 0.04]
Niromanesh2012	7.29	0.05	80	7.29	0.05	80	24.5%	0.00 [-0.02, 0.02]
Roman2008	7.27	0.07	363	7.26	0.07	370	57.3%	0.01 [-0.00, 0.02]
Spaulonci2013	7.22	0.07	46	7.22	0.08	46	6.2%	0.00 [-0.03, 0.03]
Tertti2013	7.3	0.1	109	7.3	0.1	107	8.3%	0.00 [-0.03, 0.03]
Total (95% CI)			**630**			**653**	**100.0%**	**0.01 [-0.00, 0.01]**

Heterogeneity: Tau² = 0.00; Chi² = 1.60, df = 4 (P = 0.81); I² = 0%
Test for overall effect: Z = 1.46 (P = 0.14)

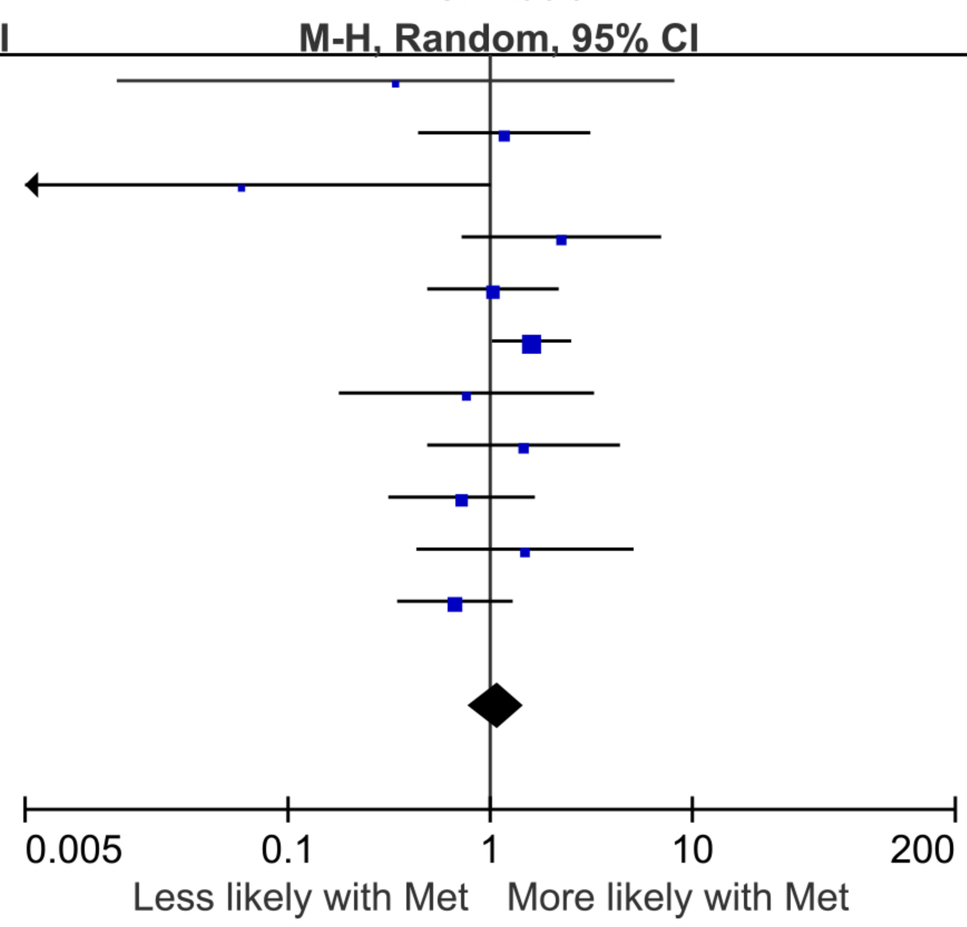


pH of umbilical cord

D

Study or Subgroup	Metformin Events	Metformin Total	Insulin Events	Insulin Total	Weight	Risk Ratio M-H, Random, 95% CI
Ashoush2016	0	47	1	48	1.0%	0.34 [0.01, 8.15]
Eid2018	8	113	7	116	8.8%	1.17 [0.44, 3.13]
Mesdaghinia2013	0	100	8	100	1.3%	0.06 [0.00, 1.01]
Niromanesh2012	9	80	4	80	6.9%	2.25 [0.72, 7.01]
Picón-César2021	12	94	12	97	13.2%	1.03 [0.49, 2.18]
Roman2008	44	363	28	370	23.9%	1.60 [1.02, 2.51]
Ruholamin2014	3	59	4	60	4.5%	0.76 [0.18, 3.26]
Saleh2016	7	67	5	70	7.3%	1.46 [0.49, 4.38]
Somani2016	7	32	10	33	11.3%	0.72 [0.31, 1.66]
Tertti2013	6	109	4	108	6.0%	1.49 [0.43, 5.12]
Wasim2019	13	137	20	141	15.8%	0.67 [0.35, 1.29]
Total (95% CI)		**1201**		**1223**	**100.0%**	**1.08 [0.78, 1.50]**
Total events	109		103			

Heterogeneity: Tau² = 0.06; Chi² = 12.82, df = 10 (P = 0.23); I² = 22%
Test for overall effect: Z = 0.48 (P = 0.63)



Preterm birth