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Supplementary appendix

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Appendix

Supplementary Table 1. Characteristics of females aged 15-49 years in the CANVAS-COVID-19 study

	Dose 1*					Dose 2*			
	Control N (%)	All vaccine type N (%)	BNT162b2 N (%)	mRNA-1273 N(%)	ChAdOx1-S N(%)	All vaccine type N(%)	BNT162b2 N (%)	mRNA-1273 N(%)	ChAdOx1-S N(%)
Total N	6,179(100)	191,360(100)	110,535(100)	69,827(100)	10,857(100)	94,937(100)	54,969(100)	39,270(100)	631(100)
Non-pregnant	5840(94.5)	185,735(97.1)	107,121(96.9)	67,644(96.9)	10,832(99.8)	91,823(96.7)	53,077(96.6)	38,054(96.9)	625(99.2)
Pregnant	339(5.5)	5,625(2.9)	3,414(3.1)	2,183(3.1)	25(0.2)	3,114(3.3)	1,892(3.4)	1,216(3.1)	6(0.8)
Trimester									
First	105(1.7)	1,297(0.7)	802(0.8)	487(0.7)	7 (0.1)	956(1.0)	568(1.0)	385(1.0)	3(0.3)
Second	144(2.3)	2,409(1.3)	1,473(1.3)	924(1.3)	11(0.1)	1,037(1.1)	636(1.2)	399(1.0)	2(0.3)
Third	90(1.5)	1,917(1.0)	1,139(1.0)	770(1.1)	7(0.1)	1,119(1.2)	687(1.2)	431(1.1)	1(0.1)
Unknown	0	2(0.0)	0	2(0.0)	0	2(0.0)	1(0.0)	1(0.0)	0

*There were 141 females with unknown vaccine type in dose one and 67 females in dose two.

Supplementary Table 2. Significant and serious health event rates by vaccine type among vaccinated and unvaccinated (controls) pregnant females, and onset and duration of significant health events

	Dose 1				Dose 2		
	Control N (%)	Any mRNA N (%)	BNT162b2 N (%)	mRNA-1273 N (%)	Any mRNA N (%)	BNT162b2 N (%)	mRNA-1273 N (%)
Sample size	339	5597	3414	2183	3108	1892	1216
Significant health events	11(3·2)	226(4·0)	137(4·0)	89(4·1)	227(7·3)	80(4·2)	147(12·1)
Onset of significant health events							
Within 60 minutes	0(0·0)	12(5·3)	8(5·8)	4(4·5)	4(1·8)	1(1·3)	3(2·0)
1-24 hours	2(18·2)	118(52·2)	69(50·4)	49(55·1)	183(80·6)	55(68·8)	128(87·1)
2-3 days	0(0·0)	55(24·3)	34(24·8)	21(23·6)	26(11·5)	14(17·5)	12(8·2)
4-5 days	3(27·3)	22(9·7)	12(8·8)	10(11·2)	5(2·2)	3(3·8)	2(1·4)
6-7 days	4(36·4)	11(4·9)	9(6·6)	2(2·2)	4(1·8)	4(5·0)	0(0·0)
8+ days	2(18·2)	7(3·1)	4(2·9)	3(3·4)	5(2·2)	3(3·8)	2(1·4)
Duration of significant health events							
Within 60 minutes	0(0·0)	6(2·7)	4(2·9)	2(2·2)	2(0·9)	1(1·3)	1(0·7)
1-10 hours	0(0·0)	17(7·5)	14(10·2)	3(3·4)	15(6·6)	6(7·5)	9(6·1)
11-24 hours	0(0·0)	46(20·4)	29(21·2)	17(19·1)	84(37·0)	29(36·3)	55(37·4)
2-3 days	1(9·1)	55(24·3)	32(23·4)	23(25·8)	67(29·5)	19(23·8)	48(32·7)
4-5 days	1(9·1)	33(14·6)	17(12·4)	16(18·0)	18(7·9)	6(7·5)	12(8·2)
6+ days	0(0·0)	17(7·5)	12(8·8)	5(5·6)	25(11·0)	11(13·8)	14(9·5)
Ongoing	9(81·8)	51(22·6)	28(20·4)	23(25·8)	16(7·0)	8(10·0)	8(5·4)

Supplementary Table 3. Reported diagnosis for serious health event rates by vaccine type among vaccinated and unvaccinated pregnant females

	Dose 1				Dose 2		
	Control N (%)	Any mRNA N (%)	BNT162b2 N (%)	mRNA-1273 N (%)	Any mRNA N (%)	BNT162b2 N (%)	mRNA-1273 N (%)
Sample size	339	5597	3414	2183	3108	1892	1216
Serious health events	2(0.6)	31(0.6)	18(0.5)	13(0.6)	19(0.6)	8(0.4)	11(0.9)
Reported diagnosis							
Anaphylaxis	0	5(16.1)	3(16.7)	2(15.4)	2(10.5)	0	2(18.2)
Sepsis	0	0	0	0	1(5.3)	0	1(9.1)
Coagulation	0	1(3.2)	0	1(7.7)	0	0	0
Pulmonary Embolism	0	1(3.2)	0	1(7.7)	0	0	0
Bell's Palsy	0	0	0	0	1(5.3)	1(12.5)	0
Severe Morning sickness	0	1(3.2)	0	1(7.7)	0	0	0
Pre-term labor	0	1(3.2)	1(5.6)	0	2(10.5)	1(12.5)	1(9.1)
Still birth	0	0	0	0	1(5.3)	1(12.5)	0
Miscarriage	0	1(3.2)	0	1(7.7)	3(15.8)	0	3(27.3)
Abruptio placenta	0	2(6.5)	2(11.1)	0	2(10.5)	2(25.0)	0
Fibroid pain	0	2(6.5)	2(11.1)	0	0	0	0
COVID-19 infection	1(50.0)	1(3.2)	1(5.6)	0	0	0	0
Oral Thrush	0	0	0	0	1(5.3)	1(12.5)	0
Muscle soreness	0	0	0	0	1(5.3)	1(12.5)	0
Kidney stones/Cholestasis	0	2(6.5)	2(11.1)	0	0	0	0
Anxiety attack	0	1(3.2)	0	1(7.7)	0	0	0
No diagnosis	1(50.0)	12(38.7)	7(38.9)	5(38.5)	5(26.3)	1(12.5)	4(36.4)
Prefer not to answer	0	1(3.2)	0	1(7.7)	0	0	0

Serious health event: any event resulting in emergency department visit and/or hospitalization in the previous seven days

Supplementary Table 4. Results of primary and sensitivity analyses assessing the relationship between vaccination status and significant health events among pregnant people

	Dose 1		Dose 2	
	Unadjusted OR (95% CI)	Adjusted aOR*(95% CI)	Unadjusted OR (95% CI)	Adjusted aOR*(95% CI)
Primary analysis^a:				
Any mRNA	1.25[0.68 – 2.32]	1.32[0.71 – 2.46]	2.35[1.27 – 4.35]	2.42[1.31 – 4.49]
BNT162b2	1.25[0.67 – 2.33]	1.26[0.67 – 2.37]	1.32[0.69 – 2.50]	1.27[0.67 – 2.42]
mRNA-1273	1.27[0.67 – 2.40]	1.45[0.76 – 2.76]	4.10[2.19 – 7.66]	4.44[2.37 – 8.31]
Sensitivity analysis^b				
Any mRNA	1.18 [0.43 -3.25]	1.22[0.44 – 3.36]	1.29[0.46 – 3.59]	1.26[0.45 – 3.52]
BNT162b2	1.12[0.40 – 3.13]	1.11[0.39 – 3.12]	0.99[0.34 – 2.88]	0.90[0.31 – 2.64]
mRNA-1273	1.29[0.45 – 3.65]	1.41[0.49 – 4.07]	1.76[0.61 – 5.09]	1.81[0.62 – 5.28]

^aPrimary end point (significant health event): a new or worsening of a health event sufficient to cause work/school absenteeism, medical consultation and/or prevent daily activities in the previous seven days

^bSevere health event: a new or worsening of a health event resulting medical consultation in the previous seven days

*Reference: unvaccinated pregnant control; adjusted for age groups, trimester and previous COVID-19 infection

Supplementary Table 5. Results of primary and sensitivity analyses assessing the relationship between pregnancy status and significant health events among vaccinated people

	Dose 1		Dose 2	
	Unadjusted OR (95% CI)	Adjusted aOR* (95% CI)	Unadjusted OR (95% CI)	Adjusted aOR* (95% CI)
Primary analysis^a:				
Any mRNA	0.63[0.55 – 0.72]	0.63[0.55 – 0.72]	0.62[0.54 – 0.71]	0.62[0.54 – 0.71]
BNT162b2	0.65[0.54 – 0.77]	0.63[0.53 – 0.75]	0.52[0.42 – 0.66]	0.52[0.41 – 0.65]
mRNA-1273	0.60[0.49 – 0.75]	0.62[0.50 – 0.77]	0.72[0.60 – 0.85]	0.72[0.60 – 0.85]
Sensitivity analysis^b				
Any mRNA	1.00[0.80 – 1.25]	1.01[0.80 – 1.27]	1.10[0.82 – 1.47]	1.10[0.82 – 1.47]
BNT162b2	1.01[0.75 – 1.37]	1.00[0.74 – 1.35]	0.93[0.61 – 1.43]	0.91[0.59 – 1.39]
mRNA-1273	0.98[0.69 – 1.38]	1.01[0.71 – 1.43]	1.32[0.88 – 1.98]	1.35[0.90 – 2.02]

^aPrimary end point (significant health event): a new or worsening of a health event sufficient to cause work/school absenteeism, medical consultation and/or prevent daily activities in the previous seven days following each dose of vaccine

^bSevere health event: a new or worsening of a health event resulting medical consultation in the previous seven days following each dose of vaccine

*Reference: vaccinated non-pregnant women; adjusted for age groups and previous COVID-19 infection