

Article title: mRNA (BNT162b2) and inactivated (CoronaVac) COVID-19 vaccination and risk of adverse events and acute diabetic complications in patients with Type 2 Diabetes Mellitus: A population-based study

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Supplementary information. Vaccination program priority groups rollout schedule in Hong Kong

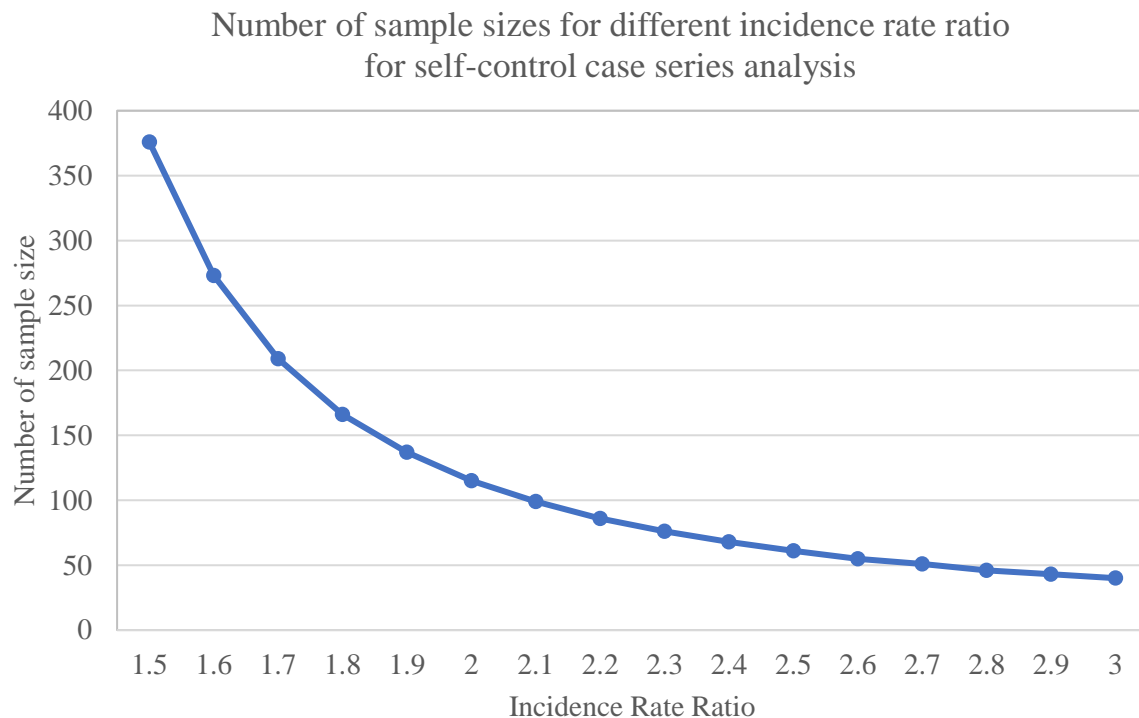
Order of expansion	Date of rollout	Vaccination group
First [1]	Feb 26, 2021	<ul style="list-style-type: none"> • Healthcare workers and staff involved in anti-epidemic work • Persons aged 60 or above and a maximum of 2 carers accompanying elderly people aged above 70 • Residents and staff of residential care homes for the elderly and persons with disabilities • People providing essential public services • People providing cross-boundary transportation or working at control points and ports
Second [2]	Mar 8, 2021	<ul style="list-style-type: none"> • Staff of food and beverages premises, markets, supermarkets, convenience stores, couriers and takeaway delivery • Staff of local public transport service operators • Registered construction workers • Staff of property management • Teachers and school staff • Staff in the tourism industry • Staff of scheduled premises under the Prevention and Control of Disease
Third [3]	Mar 16, 2021	<ul style="list-style-type: none"> • People aged between 30 and 59 • Students aged 16 or above studying outside Hong Kong • Domestic helpers
Fourth [4]	Apr 15, 2021	<ul style="list-style-type: none"> • People aged 16 to 29 (≥ 18 for person receiving CoronaVac)
Fifth [5]	Jun 14, 2021	<ul style="list-style-type: none"> • People aged 12 to 15 for BNT162b2
Sixth [6]	Jan 21, 2022	<ul style="list-style-type: none"> • People aged 5 to 11 for CoronaVac

References:

1. The Government of the Hong Kong Special Administrative Region. Government announces 2019 COVID-19 Vaccination Programme. Press Releases. 18 Feb 2021 (<https://www.info.gov.hk/gia/general/202102/18/P2021021800767.htm?fontSize=1>)
2. The Government of the Hong Kong Special Administrative Region. Government expands scope of priority groups and opens more CVCs. Press Releases. 8 Mar 2021 (<https://www.info.gov.hk/gia/general/202103/08/P2021030800738.htm>)
3. The Government of the Hong Kong Special Administrative Region. Vaccination priority groups to be expanded to cover people aged 30 or above. Press Releases. 15 Mar 2021 (<https://www.info.gov.hk/gia/general/202103/15/P2021031500626.htm?fontSize=1>)

4. The Government of the Hong Kong Special Administrative Region. COVID-19 Vaccination Programme opens to persons aged 16 or above. Press Releases. 15 Apr 2021 (<https://www.info.gov.hk/gia/general/202104/15/P2021041500565.htm?fontSize=1>)
5. The Government of the Hong Kong Special Administrative Region. Secretary for Food and Health approves lowering age limit for receiving Comirnaty vaccine. 3 Jun 2021 (<https://www.info.gov.hk/gia/general/202106/03/P2021060300652.htm?fontSize=1>)
6. The Government of the Hong Kong Special Administrative Region. Arrangements for children aged 5 to 11 to receive COVID-19 vaccines. Press Releases. 20 Jan 2022 (<https://www.info.gov.hk/gia/general/202201/20/P2022012000714.htm>)

Supplementary figure 1. Sample size calculation for self-controlled case series analysis



Remark: We assumed the relative risk of ASEI and acute diabetic complications from 1.5 to 3.0 in the exposure period of 21 days after first or second dose. According to the vaccination program in Hong Kong, the maximum observation periods is 342 days from Feb 23, 2021 to Jan 31, 2021 and the predefined risk period is 21 days in first or second dose. To achieve 80% power and detect the incidence rate ratio from 1.5 to 3.0 at 0.05 significant level, the required sample sizes for self-control case series ranging from 40 to 376. The blue points were sample sizes according to different risk ratio from 1.5 to 3.0 by 0.1. The sample size calculation was conducted by R version 4.1.0 (R Foundation for Statistical Computing, Vienna, Austria) [1-2].

Reference

1. Musonda, P., Farrington, C. P., and Whitaker, H. (2006). Sample sizes for self-controlled case series studies. *Statistics in Medicine* 25, 2618–2631.
2. Farrington P., Whitaker H., and Ghebremichael-Weldeselassie Y. (2018). *Self-controlled Case Series Studies: A modelling Guide with R*. Boca Raton: Chapman & Hall/CRC Press.
- Tang, Yongqiang. Comments on ‘Sample size evaluation for multiply matched case-control study using the score test from a conditional logistic (discrete Cox PH) regression model. *Stat Med*, 2009;28:175-177.

Supplementary Table 1. List of the definition of Adverse Events of Special Interest and acute diabetic complications using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code

AESI	ICD-9 codes
Auto-immune diseases	
Guillain-Barré Syndrome	357.0, 357.8x, 357.9
Acute disseminated encephalomyelitis	323.6x, 323.8x
Narcolepsy	347.xx, 89.17, 89.18, 307.4, 780.5
Acute aseptic arthritis	274.0x, 696.0x, 716.5x, 716.6x, 716.9x, 712.xx, 711.5x
(Idiopathic) Thrombocytopenia	287.3x, 287.4x, 287.5, 279.12, 283.11, 284.1x, 446.6x, 776.1x
Subacute thyroiditis	245.1x
Cardiovascular system diseases	
Microangiopathy	446.6x
Heart failure	428.xx, 398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93
Stress cardiomyopathy	429.83
Coronary artery disease	410.xx-414.xx, V45.81, 36.0x, 36.1x
Arrhythmia	427.xx, 426.xx, 624.x, 794.3x, 785.0x
Myocarditis	422.xx, 429.0x, 420.9x, 423.9x
Circulatory system diseases	
Thromboembolism	410.xx, 415.1x, 453.xx, 443.xx, 444.xx, 445.xx, 433.xx, 434.xx, 435.xx, 436.xx, 437.0x, 437.1x, 437.6x, 437.8x, 437.9x, 451.x, 452.x, 325.xx, 286.6x, 459.9x, 434.01, 557.0x, 557.9x, 453.40, 453.41, 453.42, 36.0x, 36.1x, 36.2x, 36.3x
Hemorrhagic disease	286.5x, 286.7, 287.xx, 430.xx, 431.xx, 432.0x, 432.9x, 99.06
Single Organ Cutaneous Vasculitis	709.1x, 446.2x, 287.0x
Hepato-renal system diseases	
Acute liver injury	570.xx, 573.3x
Acute kidney injury	584.xx, 586.xx
Acute pancreatitis	577.0x
Nerves and central nervous system diseases	
Generalized convulsion	345.xx, 780.3x, 779.0x
Meningoencephalitis	322.9x, 323.0x, 323.4x, 323.5x, 323.6x, 323.8x, 323.9x, 323.7x, 330.8x, 337.73, 046.3x, 049.8x, 036.1x, 056.01, 136.2x, 130.xx, 054.3x, 049.0x, 094.1x, 072.2x, 013.0x, 062.4x, 049.9x, 045.0x, 062.xx
Transverse myelitis	323.0x, 323.4x, 323.5x, 323.6x, 323.8x, 341.2x
Bell's Palsy	351.0x, 351.8x, 351.9x
Respiratory system disease	
Acute respiratory distress syndrome	518.8x, 518.5x, 96.7x
Skin, bone, and joints system diseases	
Erythema multiforme	695.1x
Chilblain – like lesions	991.5x
Other system diseases	
Anaphylaxis	995.0, 995.1, 995.3, 995.4, 999.4x 708.9, 519.11, 786.1, 458.9
Anosmia, ageusia	781.1x
Kawasaki disease	446.1x
Rhabdomyolysis	728.88, 728.89, 791.3
Acute diabetes complications	
Hypoglycemia	250.80, 251.0x, 251.1x, 251.2x
Hyperosmolar hyperglycemic syndrome	249.2x, 250.2x, 250.20, 250.22, 250.82
Diabetic ketoacidosis	249.1x, 250.10, 250.12, 250.30, 250.32, 250.1x

Supplementary Table 2. Characteristics of the patients receiving BNT162b2 and CoronaVac vaccination

	BNT162b2	CoronaVac
<i>Pre-existing comorbidities</i>		
Hypertension (%)	84382 (59.8)	135452 (64.6)
Congestive Heart Failure (%)	1260 (0.9)	2403 (1.1)
Vascular disease (%)	9338 (6.6)	14740 (7.0)
Peripheral vascular disease (%)	378 (0.3)	566 (0.3)
Cerebrovascular disease (%)	5944 (4.2)	11963 (5.7)
Asthma (%)	1798 (1.3)	2536 (1.2)
Chronic obstructive pulmonary disease (%)	2792 (2.0)	4694 (2.2)
Dementia (%)	145 (0.1)	603 (0.3)
Paralysis (%)	176 (0.1)	378 (0.2)
Chronic renal failure (%)	2904 (2.1)	5088 (2.4)
Mild liver disease (%)	272 (0.2)	366 (0.2)
Moderate-severe liver disease (%)	155 (0.1)	245 (0.1)
Ulcers (%)	1413 (1.0)	2525 (1.2)
Rheumatoid arthritis and other inflammatory polyarthropathies (%)	269 (0.2)	364 (0.2)
Malignancy (%)	3314 (2.3)	4861 (2.3)
Metastatic solid tumour (%)	371 (0.3)	512 (0.2)
Acute respiratory infections (%)	3362 (2.4)	6104 (2.9)
Viral infections (%)	259 (0.2)	412 (0.2)
<i>Medication use within 90 days</i>		
Renin-angiotensin-system agents (%)	70110 (49.6)	108067 (51.5)
Beta blockers (%)	33816 (23.9)	53263 (25.4)
Calcium channel blockers (%)	74197 (52.5)	119547 (57.0)
Diuretics (%)	9840 (7.0)	16092 (7.7)
Nitrates (%)	5828 (4.1)	9826 (4.7)
Lipid lowering agents (%)	98136 (69.5)	149056 (71.1)
Insulins (%)	13118 (9.3)	18536 (8.8)
Antidiabetic drugs (%)	103859 (73.5)	154996 (73.9)
Antiarrhythmic drugs (%)	241 (0.2)	344 (0.2)
Cardiac glycosides (%)	582 (0.4)	1108 (0.5)
Oral anticoagulants (%)	1994 (1.4)	3665 (1.7)
Parenteral anticoagulants (%)	427 (0.3)	395 (0.2)
Antiplatelets (%)	23959 (17.0)	39555 (18.9)
Antifibrinolytics and hemostatics (%)	537 (0.4)	594 (0.3)
Hormonal agents (contraceptives, HRT, SERM) (%)	1512 (1.1)	1850 (0.9)
Glucocorticoids (%)	1812 (1.3)	2040 (1.0)
Antidepressants (%)	7143 (5.1)	10354 (4.9)
Bevacizumab (%)	12 (0.0)	19 (0.0)
Tranexamic acid (%)	531 (0.4)	589 (0.3)
Antiepileptic drugs (%)	3047 (2.2)	4273 (2.0)

Supplementary Table 3. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications for 14-day follow-up period after vaccination of BNT162b2 and CoronaVac

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons
<i>BNT162b2</i>							
Overall adverse event of special interest	4404	34	0.80 (0.56,1.15)	-19.33 (-77.39,12.78)	39	1.04 (0.74,1.45)	2.74 (-34.57,30.60)
Autoimmune disease	955	15	0.96 (0.57,1.61)	-0.89 (-21.46,10.65)	10	0.70 (0.37,1.34)	-8.10 (-48.46,7.14)
Narcolepsy	636	11	0.81 (0.44,1.49)	-3.59 (-29.86,7.63)	9	0.71 (0.36,1.39)	-6.27 (-41.65,6.52)
Acute aseptic arthritis	306	4	2.00 (0.70,5.75)	2.15 (-4.06,7.71)	2	1.25 (0.25,6.14)	0.86 (-27.36,7.82)
Cardiovascular diseases	3483	17	0.77 (0.46,1.29)	-9.81 (-52.41,9.99)	23	1.15 (0.74,1.78)	4.20 (-15.73,19.55)
Heart failure	1642	3	0.65 (0.20,2.13)	-3.85 (-53.27,7.04)	7	1.41 (0.64,3.12)	2.09 (-7.61,9.01)
Coronary artery disease	1960	8	0.61 (0.30,1.23)	-12.20 (-65.26,5.19)	16	1.35 (0.79,2.29)	4.85 (-7.51,15.85)
Arrhythmia	1616	14	1.17 (0.65,2.11)	2.02 (-11.94,11.51)	5	0.52 (0.21,1.29)	-13.14 (-84.22,4.95)
Circulatory system	3280	18	0.81 (0.49,1.34)	-7.50 (-45.70,11.22)	22	1.10 (0.70,1.73)	2.96 (-18.61,18.47)
Thromboembolism	3069	16	0.76 (0.44,1.30)	-9.69 (-52.23,9.51)	22	1.17 (0.75,1.84)	4.45 (-14.12,19.00)
Haemorrhagic disease	450	2	0.86 (0.20,3.69)	-0.59 (-34.12,6.28)	3	1.89 (0.55,6.45)	1.74 (-6.98,7.28)
Nerves and central nervous system	415	3	1.12 (0.33,3.81)	0.62 (-23.71,8.53)	5	1.95 (0.68,5.64)	2.86 (-5.57,9.52)
Generalized convulsion	247	1	0.68 (0.09,5.44)	-1.35 (-79.36,6.07)	3	2.23 (0.51,9.81)	1.60 (-7.21,6.68)
Respiratory system (Acute respiratory distress syndrome)	1111	4	0.54 (0.20,1.41)	-4.32 (-40.22,3.03)	3	0.43 (0.13,1.40)	-6.78 (-69.84,2.99)
Acute diabetes complications	2604	7	0.36 (0.16,0.81)	-33.19 (-142.92,-2.87)	19	1.22 (0.73,2.05)	3.44 (-10.35,14.21)
Hypoglycemia	1924	5	0.39 (0.14,1.08)	-23.19 (-137.33,1.71)	16	1.67 (0.93,3.00)	6.05 (-1.73,15.37)
Hyperosmolar hyperglycemic syndrome	961	3	0.44 (0.13,1.51)	-5.42 (-62.90,3.17)	3	0.45 (0.11,1.81)	-5.36 (-76.23,4.21)
<i>CoronaVac</i>							
Overall adverse event of special interest	4847	50	0.73 (0.54,0.99)	-23.05 (-66.29,-0.48)	34	0.65 (0.46,0.93)	-33.08 (-91.36,-3.64)
Autoimmune disease	1003	12	0.69 (0.38,1.27)	-4.95 (-27.71,3.54)	10	0.61 (0.32,1.15)	-7.18 (-35.82,2.25)
Narcolepsy	659	8	0.54 (0.26,1.12)	-5.91 (-32.93,1.22)	6	0.44 (0.19,0.99)	-8.88 (-48.49,-0.02)
Acute aseptic arthritis	325	4	2.45 (0.77,7.82)	2.00 (-2.07,6.06)	3	1.84 (0.49,6.88)	1.54 (-7.12,5.94)
Cardiovascular diseases	3801	40	0.89 (0.62,1.27)	-4.51 (-28.01,9.73)	23	0.71 (0.46,1.09)	-14.65 (-53.45,3.77)
Heart failure	1767	10	0.61 (0.30,1.22)	-5.03 (-29.31,2.33)	6	0.68 (0.27,1.68)	-3.72 (-33.76,5.13)
Coronary artery disease	2083	15	0.70 (0.39,1.23)	-5.81 (-30.27,3.69)	10	0.52 (0.26,1.01)	-12.47 (-54.88,0.23)
Arrhythmia	1805	27	1.24 (0.77,2.00)	3.74 (-7.65,13.09)	11	0.75 (0.39,1.42)	-6.47 (-40.39,7.72)
Circulatory system	3592	24	0.68 (0.44,1.05)	-10.93 (-39.97,1.56)	18	0.60 (0.37,0.99)	-15.33 (-54.16,-0.17)
Thromboembolism	3374	24	0.71 (0.46,1.09)	-9.41 (-36.46,2.58)	17	0.60 (0.36,1.00)	-14.96 (-54.38,0.15)
Haemorrhagic disease	465	5	1.37 (0.49,3.82)	0.95 (-7.59,5.37)	2	0.48 (0.13,1.79)	-3.85 (-49.49,3.20)
Hepato-renal system	932	5	0.52 (0.18,1.50)	-2.99 (-32.13,2.32)	1	0.17 (0.02,1.25)	-15.27 (-283.00,1.39)
Nerves and central nervous system	483	6	0.93 (0.38,2.24)	-0.40 (-14.65,5.02)	4	0.69 (0.24,1.99)	-2.26 (-29.30,4.52)
Bell's Palsy	207	6	1.31 (0.53,3.29)	1.15 (-8.00,6.17)	4	1.10 (0.37,3.29)	0.42 (-15.41,6.17)
Respiratory system (Acute respiratory distress syndrome)	1142	4	0.46 (0.17,1.22)	-5.13 (-39.46,1.48)	5	0.64 (0.27,1.53)	-2.46 (-22.64,2.85)
Acute diabetes complications	2885	24	0.87 (0.54,1.39)	-2.96 (-22.47,7.40)	15	0.76 (0.45,1.30)	-6.02 (-32.45,5.99)
Hypoglycemia	2149	18	0.85 (0.48,1.50)	-2.22 (-19.93,6.18)	8	0.56 (0.28,1.14)	-9.75 (-47.76,2.28)
Hyperosmolar hyperglycemic syndrome	1059	10	1.25 (0.63,2.48)	1.55 (-7.34,7.50)	6	0.90 (0.37,2.16)	-0.87 (-20.98,6.74)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.

Supplementary Table 4. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications for 28-day follow-up period after vaccination of BNT162b2 and CoronaVac

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons
BNT162b2							
Overall adverse event of special interest	4335	60	0.91 (0.68,1.20)	-15.99 (-83.45,29.91)	82	1.13 (0.88,1.45)	17.51 (-23.94,55.45)
Autoimmune disease	931	27	1.07 (0.71,1.63)	2.53 (-20.37,18.99)	22	0.77 (0.48,1.24)	-11.18 (-53.70,9.43)
Narcolepsy	616	21	0.94 (0.59,1.52)	-1.76 (-28.84,14.01)	19	0.73 (0.44,1.21)	-11.14 (-52.10,7.09)
Acute aseptic arthritis	302	6	2.03 (0.80,5.13)	3.62 (-3.24,10.58)	4	1.33 (0.38,4.70)	1.77 (-21.89,10.35)
Cardiovascular diseases	3443	31	0.91 (0.61,1.34)	-6.72 (-51.25,20.69)	49	1.28 (0.93,1.76)	14.48 (-5.70,35.31)
Heart failure	1634	6	0.80 (0.33,1.91)	-3.33 (-41.54,9.81)	12	1.20 (0.62,2.29)	2.12 (-12.41,11.58)
Coronary artery disease	1938	15	0.73 (0.42,1.25)	-13.64 (-66.37,9.74)	31	1.35 (0.91,2.02)	9.44 (-4.90,24.33)
Arrhythmia	1595	23	1.22 (0.76,1.95)	5.32 (-12.42,19.57)	17	0.93 (0.54,1.60)	-2.12 (-33.84,15.14)
Circulatory system	3242	34	1.02 (0.70,1.49)	1.27 (-33.76,25.80)	44	1.13 (0.81,1.59)	7.46 (-18.71,29.25)
Thromboembolism	3034	30	0.95 (0.64,1.43)	-2.85 (-41.81,21.96)	43	1.18 (0.84,1.66)	8.87 (-14.44,29.30)
Haemorrhagic disease	445	6	1.62 (0.72,3.64)	2.83 (-5.17,9.85)	4	1.24 (0.43,3.59)	1.41 (-18.37,9.81)
Hepato-renal system	867	3	0.43 (0.13,1.38)	-7.44 (-74.83,3.11)	4	0.59 (0.22,1.64)	-3.77 (-41.51,4.44)
Nerves and central nervous system	409	4	1.05 (0.36,3.04)	0.49 (-30.33,11.58)	10	2.40 (1.09,5.27)	5.99 (0.46,13.97)
Generalized convulsion	243	2	1.12 (0.24,5.21)	0.64 (-35.65,9.24)	6	3.10 (1.00,9.59)	3.93 (0.01,10.25)
Bell's Palsy	156	2	1.13 (0.26,4.83)	0.40 (-23.46,6.62)	3	1.43 (0.38,5.39)	1.07 (-13.72,6.80)
Respiratory system (Acute respiratory distress syndrome)	1104	5	0.37 (0.16,0.90)	-16.81 (-91.76,-0.60)	9	0.63 (0.30,1.31)	-5.99 (-39.37,3.99)
Acute diabetes complications	2581	17	0.55 (0.31,0.99)	-28.79 (-104.93,-0.32)	32	1.08 (0.70,1.64)	2.52 (-19.87,18.50)
Hypoglycemia	1908	12	0.62 (0.30,1.30)	-16.15 (-86.09,8.36)	25	1.35 (0.81,2.25)	6.88 (-8.54,20.32)
Hyperosmolar hyperglycemic syndrome	955	6	0.55 (0.22,1.38)	-7.17 (-54.63,4.14)	6	0.54 (0.22,1.29)	-7.39 (-52.13,3.41)
CoronaVac							
Overall adverse event of special interest	4735	107	0.81 (0.65,1.02)	-33.35 (-90.77,3.38)	89	0.87 (0.69,1.11)	-21.23 (-75.99,16.18)
Autoimmune disease	973	23	0.64 (0.40,1.03)	-14.61 (-51.37,0.96)	29	0.94 (0.62,1.41)	-1.72 (-20.66,10.01)
Narcolepsy	632	17	0.56 (0.33,0.97)	-15.73 (-56.62,-0.44)	24	0.98 (0.63,1.53)	-0.37 (-16.24,9.60)
Acute aseptic arthritis	322	6	1.74 (0.62,4.85)	2.05 (-5.32,7.03)	4	1.18 (0.40,3.46)	0.73 (-13.24,6.30)
Cardiovascular diseases	3740	68	0.77 (0.56,1.04)	-21.24 (-64.06,3.22)	56	0.88 (0.65,1.19)	-9.36 (-43.99,13.19)
Heart failure	1747	21	0.64 (0.34,1.20)	-9.84 (-46.73,4.06)	15	0.87 (0.50,1.53)	-2.57 (-24.51,8.41)
Coronary artery disease	2054	26	0.59 (0.37,0.93)	-20.32 (-63.97,-1.65)	28	0.78 (0.51,1.19)	-8.30 (-36.84,6.10)
Arrhythmia	1781	40	0.91 (0.59,1.41)	-2.98 (-27.88,11.70)	22	0.73 (0.46,1.17)	-11.27 (-46.80,5.85)
Circulatory system	3533	50	0.71 (0.52,0.99)	-22.66 (-64.20,-0.67)	51	0.88 (0.64,1.21)	-7.75 (-38.47,11.76)
Thromboembolism	3319	50	0.73 (0.53,1.02)	-19.24 (-57.60,1.11)	46	0.82 (0.59,1.15)	-11.26 (-44.56,8.38)
Haemorrhagic disease	458	7	1.01 (0.41,2.50)	0.08 (-17.12,7.12)	7	1.00 (0.36,2.73)	-0.01 (-20.65,7.52)
Hepato-renal system	921	12	0.70 (0.36,1.35)	-3.97 (-25.90,3.74)	5	0.41 (0.16,1.05)	-13.07 (-76.67,0.73)
Acute kidney injury	712	7	0.83 (0.35,1.97)	-0.85 (-14.88,3.88)	1	0.17 (0.02,1.18)	-20.25 (-333.14,1.20)
Acute pancreatitis	218	3	0.68 (0.20,2.30)	-1.84 (-30.55,4.28)	5	1.05 (0.37,2.99)	0.20 (-12.76,5.03)
Nerves and central nervous system	475	10	0.68 (0.34,1.39)	-4.10 (-27.62,3.94)	8	0.65 (0.30,1.41)	-4.80 (-32.86,4.07)
Bell's Palsy	199	9	1.01 (0.47,2.18)	0.06 (-15.75,7.42)	9	1.34 (0.62,2.92)	2.22 (-8.49,9.02)
Respiratory system (Acute respiratory distress syndrome)	1129	6	0.32 (0.13,0.79)	-23.03 (-111.17,-1.78)	16	1.11 (0.64,1.93)	1.04 (-9.24,7.77)
Acute diabetes complications	2851	46	0.83 (0.58,1.21)	-7.16 (-33.18,7.71)	27	0.64 (0.42,0.97)	-20.54 (-62.69,-0.98)
Hypoglycemia	2122	34	0.86 (0.56,1.34)	-4.02 (-26.71,8.57)	19	0.65 (0.39,1.08)	-13.99 (-52.81,2.43)
Hyperosmolar hyperglycemic syndrome	1047	18	1.07 (0.61,1.87)	0.89 (-12.30,9.08)	10	0.70 (0.36,1.37)	-5.83 (-35.13,5.23)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.

Supplementary Table 5. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications for 49-day follow-up period after vaccination of BNT162b2 and CoronaVac

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons
BNT162b2							
Overall adverse event of special interest	4276	68	0.94 (0.72,1.21)	-14.45 (-94.62,43.67)	133	1.06 (0.85,1.31)	11.26 (-43.39,58.37)
Autoimmune disease	906	29	1.20 (0.80,1.81)	9.45 (-17.78,31.58)	45	0.97 (0.67,1.40)	-1.75 (-34.21,20.06)
Narcolepsy	593	23	1.10 (0.69,1.74)	4.11 (-27.15,25.68)	40	0.95 (0.64,1.41)	-2.35 (-33.56,17.62)
Acute aseptic arthritis	300	6	2.00 (0.78,5.16)	4.29 (-4.32,12.08)	6	1.16 (0.43,3.10)	1.16 (-19.75,10.14)
Cardiovascular diseases	3420	32	0.77 (0.53,1.12)	-24.85 (-89.60,10.92)	71	1.00 (0.75,1.33)	-0.07 (-34.55,25.72)
Heart failure	1629	6	0.59 (0.24,1.45)	-11.77 (-80.42,7.70)	17	0.89 (0.48,1.68)	-1.96 (-27.51,10.11)
Coronary artery disease	1922	15	0.60 (0.36,1.03)	-31.87 (-112.90,1.61)	47	1.14 (0.80,1.62)	5.96 (-15.52,23.92)
Arrhythmia	1578	24	1.17 (0.74,1.84)	6.11 (-18.74,24.87)	33	1.11 (0.72,1.70)	4.05 (-21.21,22.47)
Circulatory system	3218	36	0.91 (0.64,1.30)	-7.88 (-55.74,22.92)	66	0.93 (0.68,1.26)	-6.30 (-46.32,20.80)
Thromboembolism	3011	32	0.87 (0.60,1.27)	-11.54 (-63.28,19.69)	64	0.96 (0.70,1.31)	-3.37 (-40.00,22.15)
Haemorrhagic disease	444	6	1.11 (0.52,2.37)	0.80 (-13.45,8.39)	5	0.80 (0.29,2.17)	-2.09 (-35.39,7.84)
Hepato-renal system	860	5	0.64 (0.27,1.53)	-6.25 (-50.88,6.40)	9	0.77 (0.35,1.71)	-3.21 (-34.25,7.69)
Nerves and central nervous system	405	5	1.13 (0.43,2.94)	1.50 (-27.28,13.77)	13	1.86 (0.89,3.87)	6.11 (-2.47,15.49)
Generalized convulsion	241	2	0.98 (0.20,4.75)	-0.11 (-52.08,10.54)	8	2.90 (0.93,9.08)	4.76 (-1.03,11.88)
Respiratory system (Acute respiratory distress syndrome)	1090	7	0.52 (0.25,1.07)	-18.75 (-87.29,1.96)	21	0.93 (0.54,1.61)	-1.41 (-24.37,10.96)
Acute diabetes complications	2562	18	0.58 (0.33,1.02)	-36.24 (-129.06,1.16)	50	1.04 (0.71,1.52)	1.82 (-25.54,21.37)
Hypoglycemia	1894	12	0.64 (0.30,1.34)	-20.78 (-109.85,12.09)	39	1.39 (0.88,2.20)	10.25 (-6.73,26.24)
Hyperosmolar hyperglycemic syndrome	949	7	0.63 (0.26,1.48)	-7.76 (-56.95,6.62)	11	0.57 (0.28,1.16)	-9.61 (-51.51,2.80)
CoronaVac							
Overall adverse event of special interest	4661	121	0.76 (0.61,0.94)	-62.73 (-141.47,-10.64)	149	0.81 (0.66,0.99)	-47.77 (-115.37,-2.66)
Autoimmune disease	946	26	0.71 (0.46,1.11)	-16.07 (-58.81,4.89)	53	1.05 (0.75,1.47)	1.89 (-16.48,15.82)
Narcolepsy	610	20	0.66 (0.40,1.08)	-16.21 (-60.03,3.12)	43	1.07 (0.74,1.54)	1.99 (-14.01,14.03)
Acute aseptic arthritis	318	6	1.87 (0.66,5.27)	3.14 (-5.76,9.17)	8	1.66 (0.60,4.56)	2.67 (-7.52,8.84)
Cardiovascular diseases	3694	78	0.75 (0.56,0.99)	-32.56 (-87.36,-0.50)	92	0.81 (0.63,1.04)	-22.94 (-66.39,4.19)
Heart failure	1733	23	0.65 (0.35,1.21)	-13.19 (-60.07,5.55)	27	0.98 (0.62,1.55)	-0.46 (-19.71,11.46)
Coronary artery disease	2029	27	0.50 (0.32,0.78)	-41.69 (-109.93,-9.32)	52	0.84 (0.60,1.18)	-8.13 (-35.39,7.88)
Arrhythmia	1762	48	0.94 (0.63,1.41)	-2.53 (-30.02,14.77)	33	0.60 (0.39,0.91)	-27.65 (-79.35,-3.17)
Circulatory system	3491	56	0.65 (0.48,0.88)	-42.80 (-101.79,-8.96)	87	0.84 (0.65,1.09)	-15.47 (-51.74,7.59)
Thromboembolism	3280	56	0.67 (0.49,0.91)	-37.24 (-91.98,-6.31)	79	0.79 (0.60,1.03)	-20.04 (-58.75,2.97)
Haemorrhagic disease	454	7	0.76 (0.31,1.82)	-2.91 (-31.31,6.49)	11	0.94 (0.40,2.19)	-0.63 (-21.57,7.80)
Hepato-renal system	912	13	0.60 (0.30,1.18)	-9.26 (-46.49,3.12)	13	0.60 (0.32,1.12)	-9.40 (-43.76,2.18)
Acute kidney injury	707	8	0.73 (0.31,1.73)	-2.36 (-24.68,4.71)	5	0.44 (0.17,1.16)	-8.27 (-55.28,1.52)
Acute pancreatitis	216	3	0.57 (0.16,1.97)	-3.67 (-45.21,4.33)	7	0.81 (0.34,1.92)	-1.15 (-17.22,4.23)
Nerves and central nervous system	461	13	0.88 (0.47,1.64)	-2.10 (-24.67,8.71)	19	1.00 (0.57,1.75)	0.01 (-16.68,9.56)
Bell's Palsy	191	11	1.11 (0.55,2.23)	1.27 (-14.76,10.14)	15	1.40 (0.71,2.79)	3.61 (-7.62,11.78)
Respiratory system (Acute respiratory distress syndrome)	1122	7	0.28 (0.12,0.65)	-35.81 (-145.99,-4.99)	22	0.78 (0.46,1.31)	-4.01 (-23.64,4.82)
Acute diabetes complications	2825	47	0.74 (0.51,1.08)	-16.77 (-56.66,4.49)	52	0.72 (0.52,0.99)	-18.82 (-54.12,-0.20)
Hypoglycemia	2098	35	0.88 (0.57,1.36)	-5.16 (-35.81,12.46)	42	0.92 (0.63,1.34)	-3.31 (-27.71,11.97)
Hyperosmolar hyperglycemic syndrome	1040	19	0.86 (0.49,1.50)	-2.72 (-24.01,7.84)	16	0.61 (0.36,1.04)	-10.74 (-42.16,1.01)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.

Supplementary Table 6. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications after vaccination of BNT162b2 and CoronaVac after excluding the patients infected by COVID-19 before or during the study period

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons
BNT162b2							
Overall adverse event of special interest	4366	52	0.81 (0.60,1.11)	-26.52 (-94.03,13.60)	56	0.99 (0.74,1.32)	-1.25 (-48.74,33.93)
Autoimmune disease	941	26	1.10 (0.72,1.68)	2.65 (-15.97,16.44)	13	0.58 (0.33,1.05)	-21.20 (-84.10,1.81)
Narcolepsy	623	21	1.02 (0.63,1.64)	0.51 (-20.10,13.65)	12	0.60 (0.33,1.11)	-16.27 (-70.73,3.34)
Acute aseptic arthritis	305	5	1.61 (0.59,4.38)	1.89 (-7.23,7.98)	2	0.77 (0.15,3.92)	-1.47 (-57.54,7.71)
Cardiovascular diseases	3462	24	0.72 (0.45,1.14)	-19.58 (-77.98,7.91)	36	1.22 (0.85,1.75)	8.97 (-11.09,27.33)
Heart failure	1637	6	0.86 (0.35,2.11)	-1.73 (-32.80,9.41)	9	1.18 (0.57,2.43)	1.65 (-13.47,10.56)
Coronary artery disease	1948	10	0.47 (0.24,0.93)	-29.16 (-116.51,-1.31)	23	1.30 (0.82,2.06)	6.00 (-8.18,18.88)
Arrhythmia	1599	20	1.15 (0.68,1.96)	3.10 (-16.12,16.40)	12	0.87 (0.47,1.61)	-3.61 (-37.97,12.65)
Circulatory system	3254	29	0.92 (0.61,1.38)	-4.72 (-42.60,18.13)	34	1.16 (0.80,1.69)	7.07 (-16.41,26.57)
Thromboembolism	3047	25	0.82 (0.53,1.28)	-10.08 (-54.23,13.33)	33	1.19 (0.82,1.75)	7.60 (-13.42,25.72)
Haemorrhagic disease	443	6	2.01 (0.87,4.61)	3.72 (-1.95,10.68)	4	1.71 (0.59,4.94)	3.07 (-9.55,10.88)
Hepato-renal system	869	2	0.32 (0.08,1.31)	-8.24 (-106.08,2.20)	3	0.61 (0.18,2.01)	-2.54 (-40.83,4.64)
Nerves and central nervous system	412	4	0.95 (0.31,2.89)	-0.36 (-29.57,8.87)	6	1.55 (0.57,4.25)	2.61 (-10.41,10.36)
Generalized convulsion	245	2	0.84 (0.17,4.18)	-0.69 (-41.70,6.47)	3	1.36 (0.29,6.45)	0.97 (-20.96,7.18)
Respiratory system (Acute respiratory distress syndrome)	1104	4	0.32 (0.12,0.85)	-13.53 (-87.22,-0.53)	5	0.45 (0.17,1.20)	-7.78 (-58.82,2.01)
Acute diabetes complications	2591	12	0.39 (0.20,0.75)	-40.60 (-143.89,-5.82)	23	0.94 (0.56,1.58)	-1.60 (-28.09,13.12)
Hypoglycemia	1917	8	0.39 (0.17,0.93)	-29.87 (-141.22,-0.94)	19	1.26 (0.69,2.31)	4.01 (-12.86,16.04)
Hyperosmolar hyperglycemic syndrome	955	5	0.46 (0.15,1.37)	-7.67 (-67.90,3.30)	4	0.43 (0.14,1.37)	-8.52 (-78.06,3.34)
CoronaVac							
Overall adverse event of special interest	4789	79	0.77 (0.59,1.00)	-30.64 (-83.39,0.17)	60	0.77 (0.58,1.02)	-30.74 (-86.81,1.96)
Autoimmune disease	987	18	0.68 (0.40,1.15)	-9.11 (-39.69,3.50)	20	0.84 (0.52,1.34)	-3.69 (-23.88,6.70)
Narcolepsy	646	12	0.51 (0.27,0.98)	-12.67 (-52.97,-0.16)	15	0.77 (0.45,1.32)	-4.01 (-23.96,4.74)
Acute aseptic arthritis	322	6	2.72 (1.00,7.42)	3.05 (-0.01,7.68)	4	1.69 (0.58,4.94)	1.97 (-6.52,7.08)
Cardiovascular diseases	3766	55	0.82 (0.59,1.13)	-12.03 (-45.82,7.78)	41	0.86 (0.61,1.20)	-9.16 (-42.76,11.22)
Heart failure	1752	20	0.93 (0.52,1.66)	-1.10 (-19.51,8.53)	11	0.84 (0.44,1.60)	-2.82 (-26.94,8.07)
Coronary artery disease	2065	19	0.58 (0.34,0.98)	-15.70 (-56.47,-0.35)	21	0.78 (0.48,1.26)	-6.04 (-31.22,6.00)
Arrhythmia	1788	35	1.10 (0.71,1.70)	2.30 (-14.21,14.13)	17	0.76 (0.45,1.30)	-8.15 (-42.67,8.02)
Circulatory system	3567	34	0.62 (0.42,0.91)	-22.64 (-64.31,-2.88)	31	0.69 (0.47,1.00)	-16.49 (-51.78,0.11)
Thromboembolism	3351	33	0.62 (0.42,0.92)	-21.51 (-62.26,-2.44)	30	0.71 (0.48,1.04)	-14.53 (-48.62,1.77)
Haemorrhagic disease	461	7	0.93 (0.24,3.65)	-0.36 (-28.06,6.27)	2	0.19 (0.03,1.37)	-19.55 (-323.54,2.34)
Hepato-renal system	925	9	0.69 (0.33,1.45)	-2.61 (-21.21,3.25)	2	0.22 (0.05,0.91)	-20.81 (-185.87,-0.31)
Acute pancreatitis	220	3	0.93 (0.28,3.13)	-0.20 (-16.21,4.27)	3	0.78 (0.23,2.63)	-0.79 (-20.58,3.89)
Nerves and central nervous system	478	8	0.78 (0.35,1.74)	-1.95 (-21.63,4.95)	6	0.67 (0.29,1.58)	-3.36 (-28.88,4.27)
Bell's Palsy	204	8	1.13 (0.48,2.64)	0.72 (-11.44,6.67)	5	0.88 (0.34,2.29)	-0.83 (-20.79,6.05)
Respiratory system (Acute respiratory distress syndrome)	1132	5	0.34 (0.12,0.95)	-14.76 (-88.22,-0.23)	11	0.98 (0.52,1.85)	-0.17 (-11.70,5.77)
Acute diabetes complications	2868	32	0.74 (0.47,1.14)	-9.38 (-37.85,4.22)	21	0.68 (0.42,1.09)	-12.34 (-46.35,2.73)
Hypoglycemia	2136	22	0.68 (0.39,1.17)	-8.77 (-39.36,3.74)	16	0.77 (0.45,1.30)	-5.65 (-30.93,5.87)
Hyperosmolar hyperglycemic syndrome	1051	15	1.22 (0.67,2.21)	1.91 (-7.86,8.82)	7	0.65 (0.28,1.53)	-5.74 (-42.42,5.60)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.

Supplementary Table 7. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications after vaccination of BNT162b2 and CoronaVac with vaccination before Dec 31,2021

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	
BNT162b2							
Overall adverse event of special interest	4211	51	0.86 (0.64,1.16)	-21.82 (-90.52,21.20)	56	1.00 (0.75,1.33)	-0.35 (-53.00,39.03)
Autoimmune disease	878	26	1.13 (0.74,1.73)	3.97 (-16.47,19.75)	13	0.60 (0.33,1.07)	-22.92 (-93.27,3.22)
Narcolepsy	579	21	1.04 (0.65,1.68)	1.11 (-21.98,16.18)	12	0.62 (0.34,1.13)	-17.80 (-79.21,4.59)
Acute aseptic arthritis	288	5	1.64 (0.60,4.52)	2.26 (-8.00,9.25)	2	0.79 (0.16,3.97)	-1.55 (-64.06,8.88)
Cardiovascular diseases	3361	23	0.76 (0.48,1.18)	-17.91 (-76.59,11.06)	36	1.23 (0.86,1.77)	10.50 (-11.64,31.09)
Heart failure	1605	6	0.87 (0.36,2.12)	-1.87 (-37.15,10.86)	9	1.19 (0.58,2.46)	1.98 (-15.13,12.18)
Coronary artery disease	1890	9	0.48 (0.24,0.95)	-31.47 (-127.82,-1.10)	23	1.31 (0.83,2.09)	6.89 (-8.61,21.26)
Arrhythmia	1554	19	1.22 (0.73,2.04)	4.69 (-13.98,19.00)	12	0.88 (0.47,1.62)	-3.75 (-41.73,14.32)
Circulatory system	3177	27	0.93 (0.61,1.41)	-4.26 (-45.43,20.92)	34	1.18 (0.81,1.71)	8.38 (-17.12,29.94)
Thromboembolism	2976	23	0.83 (0.53,1.30)	-10.25 (-58.36,15.48)	33	1.21 (0.83,1.77)	8.82 (-13.98,28.85)
Haemorrhagic disease	434	6	2.05 (0.89,4.71)	4.35 (-1.87,12.29)	4	1.73 (0.60,5.03)	3.59 (-10.55,12.50)
Hepato-renal system	848	2	0.33 (0.08,1.32)	-9.39 (-120.76,2.54)	3	0.61 (0.18,2.01)	-2.89 (-46.63,5.33)
Nerves and central nervous system	395	4	0.97 (0.32,2.97)	-0.23 (-33.22,10.30)	6	1.57 (0.57,4.30)	3.05 (-11.73,11.91)
Generalized convulsion	243	2	0.85 (0.17,4.26)	-0.72 (-47.29,7.46)	3	1.38 (0.29,6.51)	1.15 (-23.59,8.25)
Respiratory system (Acute respiratory distress syndrome)	1087	5	0.41 (0.17,0.98)	-11.94 (-74.20,-0.06)	5	0.45 (0.17,1.19)	-9.91 (-72.63,2.48)
Acute diabetes complications	2503	10	0.39 (0.20,0.77)	-42.70 (-155.65,-5.57)	23	0.94 (0.56,1.58)	-1.77 (-30.75,14.30)
Hypoglycemia	1862	6	0.41 (0.17,0.98)	-30.02 (-149.61,-0.26)	19	1.26 (0.69,2.31)	4.26 (-13.90,17.29)
Hyperosmolar hyperglycemic syndrome	922	5	0.46 (0.15,1.36)	-8.86 (-77.87,3.71)	4	0.43 (0.14,1.38)	-9.71 (-89.11,3.86)
CoronaVac							
Overall adverse event of special interest	4434	67	0.82 (0.63,1.06)	-26.08 (-81.86,8.15)	60	0.79 (0.60,1.04)	-31.76 (-94.87,5.41)
Autoimmune disease	891	17	0.71 (0.42,1.20)	-9.81 (-45.40,5.43)	20	0.85 (0.53,1.35)	-4.41 (-29.57,8.62)
Narcolepsy	575	11	0.54 (0.29,1.02)	-14.09 (-60.72,0.58)	15	0.77 (0.45,1.32)	-4.92 (-29.83,5.98)
Acute aseptic arthritis	296	6	2.72 (1.00,7.40)	3.92 (-0.02,9.87)	4	1.72 (0.59,5.03)	2.59 (-8.06,9.14)
Cardiovascular diseases	3527	41	0.82 (0.59,1.16)	-12.53 (-51.16,9.81)	41	0.87 (0.62,1.23)	-8.74 (-45.15,13.46)
Heart failure	1660	11	0.84 (0.43,1.65)	-2.59 (-27.63,8.20)	11	0.84 (0.44,1.60)	-2.63 (-26.38,7.80)
Coronary artery disease	1934	16	0.60 (0.35,1.03)	-16.65 (-63.58,0.90)	21	0.80 (0.50,1.30)	-6.23 (-35.45,8.01)
Arrhythmia	1670	25	1.08 (0.68,1.71)	2.01 (-16.98,15.16)	17	0.77 (0.45,1.33)	-7.88 (-44.29,8.98)
Circulatory system	3354	31	0.67 (0.46,0.97)	-21.95 (-66.84,-0.95)	31	0.70 (0.48,1.02)	-18.61 (-60.57,1.33)
Thromboembolism	3149	30	0.67 (0.46,0.98)	-20.78 (-64.61,-0.56)	30	0.72 (0.49,1.06)	-16.32 (-56.85,3.27)
Haemorrhagic disease	446	7	0.96 (0.24,3.77)	-0.25 (-34.25,8.12)	2	0.19 (0.03,1.40)	-24.39 (-406.20,3.17)
Hepato-renal system	882	8	0.76 (0.36,1.60)	-2.18 (-22.41,4.72)	2	0.22 (0.05,0.92)	-23.90 (-220.74,-0.29)
Acute pancreatitis	203	3	0.96 (0.29,3.22)	-0.15 (-20.12,5.57)	3	0.79 (0.23,2.66)	-1.01 (-26.58,5.04)
Nerves and central nervous system	451	8	0.86 (0.40,1.84)	-1.41 (-21.99,6.82)	6	0.68 (0.29,1.61)	-4.11 (-36.34,5.64)
Bell's Palsy	183	8	1.29 (0.58,2.85)	1.80 (-10.00,8.97)	5	0.92 (0.35,2.40)	-0.71 (-25.32,8.05)
Respiratory system (Acute respiratory distress syndrome)	1094	4	0.35 (0.13,0.97)	-17.38 (-107.07,-0.15)	11	0.99 (0.53,1.88)	-0.06 (-13.92,7.20)
Acute diabetes complications	2645	24	0.77 (0.50,1.20)	-8.43 (-38.45,6.24)	21	0.68 (0.43,1.09)	-13.18 (-51.14,3.27)
Hypoglycemia	1975	16	0.73 (0.43,1.25)	-7.22 (-37.21,5.66)	16	0.77 (0.45,1.31)	-5.93 (-33.99,6.68)
Hyperosmolar hyperglycemic syndrome	967	13	1.23 (0.66,2.27)	2.32 (-9.71,10.77)	7	0.66 (0.28,1.55)	-6.55 (-50.12,6.81)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.

Supplementary Table 8. Adjusted incidence rate ratio and risk difference of adverse event of special interest and acute diabetes complications (by category) for 21-day follow-up period after vaccination of BNT162b2 and CoronaVac among the patients with HbA1c<7% and ≥7%

	Reference		First dose		Second dose		
	Event	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons	Event	Adjusted IRR (95% CI)	Risk difference (95% CI), incidence per 100,000 persons
HbA1c<7%							
BNT162b2							
Overall adverse event of special interest	2572	33	0.83 (0.57,1.20)	-24.02 (-110.01,24.35)	37	1.03 (0.72,1.47)	3.12 (-55.65,45.75)
Autoimmune disease	568	19	1.38 (0.84,2.26)	8.88 (-8.91,26.10)	9	0.70 (0.34,1.44)	-13.76 (-89.65,14.21)
Cardiovascular diseases	2106	12	0.56 (0.31,1.04)	-33.72 (-137.82,2.38)	23	1.18 (0.76,1.83)	6.63 (-19.19,27.51)
Circulatory system	1811	15	0.74 (0.41,1.36)	-15.56 (-90.59,16.46)	22	1.24 (0.77,1.98)	8.73 (-18.22,30.94)
Nerves and central nervous system	254	2	0.70 (0.16,3.04)	-2.92 (-76.97,9.78)	4	1.52 (0.44,5.26)	2.28 (-18.73,11.79)
Respiratory system	709	5	0.58 (0.23,1.44)	-6.33 (-56.28,5.22)	3	0.39 (0.11,1.34)	-13.74 (-134.97,4.32)
Acute diabetes complications	963	2	0.17 (0.04,0.75)	-59.41 (-544.00,-2.04)	9	1.22 (0.58,2.56)	2.20 (-15.40,13.17)
CoronaVac							
Overall adverse event of special interest	2825	43	0.66 (0.46,0.96)	-44.12 (-127.58,-3.12)	34	0.72 (0.50,1.05)	-33.59 (-109.81,4.76)
Autoimmune disease	582	14	0.88 (0.47,1.64)	-2.94 (-35.00,12.21)	14	1.02 (0.58,1.80)	0.52 (-22.17,13.83)
Cardiovascular diseases	2295	35	0.72 (0.47,1.09)	-20.39 (-74.55,5.49)	25	0.82 (0.52,1.29)	-11.20 (-60.39,14.86)
Circulatory system	1982	19	0.64 (0.38,1.09)	-13.83 (-58.47,2.89)	10	0.40 (0.21,0.76)	-37.10 (-133.24,-5.23)
Hepato-renal system	532	6	0.71 (0.26,1.93)	-2.37 (-33.55,5.64)	1	0.17 (0.02,1.27)	-27.05 (-482.08,2.51)
Nerves and central nervous system	291	3	0.51 (0.14,1.95)	-4.29 (-63.04,4.80)	3	0.64 (0.20,2.10)	-2.53 (-40.52,5.17)
Respiratory system	724	4	0.39 (0.12,1.25)	-10.52 (-92.60,2.53)	5	0.65 (0.25,1.69)	-3.53 (-37.44,5.17)
Acute diabetes complications	1068	13	0.79 (0.40,1.56)	-4.83 (-40.23,9.52)	11	0.99 (0.53,1.84)	-0.20 (-23.32,12.10)
HbA1c≥7%							
BNT162b2							
Overall adverse event of special interest	1655	18	0.79 (0.45,1.36)	-33.99 (-206.72,45.36)	18	0.90 (0.55,1.50)	-13.30 (-143.47,57.11)
Autoimmune disease	367	7	0.71 (0.31,1.63)	-10.64 (-104.18,18.29)	4	0.45 (0.17,1.23)	-31.97 (-237.01,8.93)
Cardiovascular diseases	1261	11	0.98 (0.46,2.10)	-1.14 (-106.99,47.37)	12	1.25 (0.65,2.43)	12.18 (-49.10,53.07)
Circulatory system	1361	12	1.07 (0.58,1.96)	3.70 (-63.73,43.28)	11	1.03 (0.54,1.97)	1.62 (-76.07,43.47)
Acute diabetes complications	1586	10	0.54 (0.25,1.14)	-48.29 (-246.24,10.37)	14	0.87 (0.42,1.80)	-8.17 (-114.37,37.30)
CoronaVac							
Overall adverse event of special interest	1814	36	0.98 (0.67,1.43)	-2.89 (-88.18,54.22)	24	0.81 (0.53,1.25)	-32.12 (-161.03,36.44)
Autoimmune disease	394	4	0.38 (0.13,1.10)	-25.54 (-190.68,2.68)	6	0.60 (0.26,1.40)	-10.55 (-84.06,8.25)
Cardiovascular diseases	1370	19	0.99 (0.58,1.68)	-0.73 (-59.04,33.11)	14	0.82 (0.47,1.44)	-12.46 (-91.25,24.84)
Circulatory system	1492	15	0.63 (0.36,1.11)	-36.54 (-155.50,8.91)	21	1.14 (0.70,1.85)	7.68 (-36.57,39.77)
Hepato-renal system	371	4	0.95 (0.35,2.56)	-0.47 (-36.12,11.84)	1	0.32 (0.04,2.49)	-17.48 (-445.60,11.61)
Nerves and central nervous system	172	5	1.34 (0.47,3.87)	2.76 (-25.31,16.44)	2	0.66 (0.14,3.12)	-5.65 (-138.74,15.06)
Respiratory system	388	1	0.29 (0.04,2.27)	-25.47 (-553.07,12.12)	6	1.85 (0.79,4.34)	4.84 (-5.79,16.69)
Acute diabetes complications	1754	18	0.64 (0.35,1.15)	-24.87 (-115.81,8.28)	10	0.48 (0.24,0.98)	-47.03 (-203.79,-0.58)

Notes: IRR = Incidence rate ratio; CI = confidence interval. Adjusted IRR was obtained from conditional Poisson regression adjusted for seasonal effect from self-controlled case series analysis.