Ministerio de Salud

Gobierno de Chile

Immunization Campaign against SARS-CoV-2

Early estimates of the effectiveness of booster shots in Chile

Grupo para estudio de vacunas SARS-CoV-2 MINSAL (vCovid MINSAL)

October 2021

BACKGROUND

1ra ENTREGA DE RESULTADOS ESTUDIO DOSIS DE REFUERZO

- Evidence suggest that neutralizing antibodies against SARS-CoV-2 induced by vaccines wane over time, which may decrease their effect against Covid-19 and it consequences.
- The longitudinal effectiveness assessments performed by the Chile Ministry of Health showed a sharp discrease in the effectiveness to prevent Covid-19, specifically within the group immunized with inactivated vaccines early on.
- International studies have shown that the combination of vaccines is safe and effectively increase levels of SARS-CoV-2 neutralizing antibodies.

DESIGN AND METHODS

- We analized a cohort of people that are affiliated with the National Health Fund (FONASA):
  - **Aged 16 years or older**
  - **No history of SARS-CoV-2 infection** (confirmed of probable Covid-19).
  - **That have already received CoronaVac** as a primary immunization.
- The effectiveness was estimated for each vaccine booster and focuses on preventing Covid-19 or Covid-19 related hospitalization. Outcomes were compared to the unvaccinated population.

DESIGN AND METHODS

- The effectivenes was estimated 14 days after receiving the booster shot with any of the available vaccines.
- The comparison groups consisted of people that received the booster dose or not. All the people contributed (person-days) to the non vaccinated group before starting their vaccination schedule.
- The results are independent from age, sex, place of residence, presence of comorbilities, nationality and income level.

RESULTS | CHARACTERISTICS OF THE COHORT

- The total sample was **11.201.635 people.**
- **500.145 cases of Covid-19.**
- The distribution of the covariates significantly differed between people immunized or not.

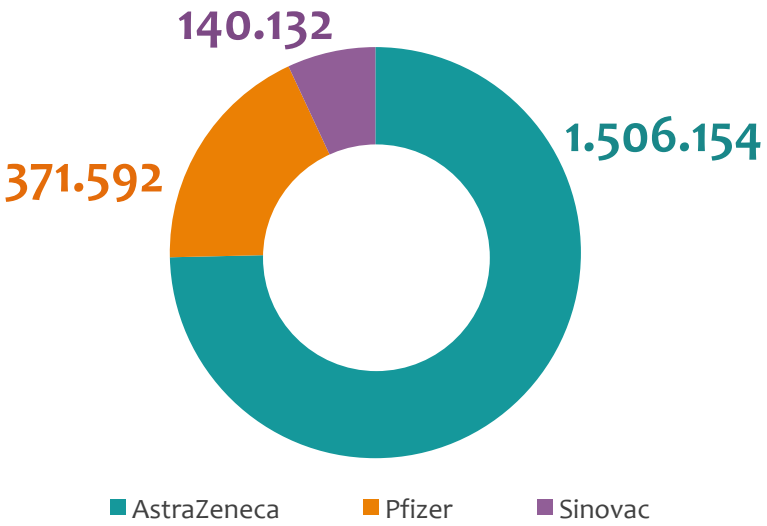
RESULTS | CHARACTERISTICS OF THE COHORT

					Vaccinated			
		Covid-19		Unvaccinated	1 dose	2 doses	3 doses	
Characteristic	N (%)	N (row %)	p-value	N (row %)	N (row %)	N (%)	N (%)	p-value
Total	11,201,635 (100.0)	500,145 (4.5)	-	1,318,288 (11.7687)	719,263 (6.4211)	7,146,206 (63.7961)	2,017,878 (18.0141)	-
Region								
Arica	144,726 (1.3)	6,695 (4.6)	< 0.0001	21,489 (14.85)	10,608 (7.33)	92,597 (63.98)	20,032 (13.84)	< 0.0001
Tarapacá	200,869 (1.8)	8,828 (4.4)		32,257 (16.06)	12,694 (6.32)	131,619 (65.52)	24,299 (12.1)	
Antofagasta	329,632 (2.9)	10,659 (3.2)		43,639 (13.24)	24,239 (7.353)	218,761 (66.37)	42,993 (13.04)	
Atacama	191,906 (1.7)	5,991 (3.1)		23,938 (12.47)	12,995 (6.772)	127,012 (66.18)	27,961 (14.57)	
Coquimbo	531,115 (4.7)	17,518 (3.3)		59,364 (11.18)	34,141 (6.428)	356,775 (67.17)	80,835 (15.22)	
Valparaíso	1,212,562 (11)	44,364 (3.7)		150,740 (12.43)	71,947 (5.933)	747,759 (61.67)	242,116 (19.97)	
Metropolitana	4,098,579 (37)	184,233 (4.5)		505,690 (12.34)	267,377 (6.524)	2,530,109 (61.73)	795,403 (19.41)	
L.G.B. O'Higgins	629,292 (5.6)	24,266 (3.9)		60,130 (9.555)	33,564 (5.334)	428,027 (68.02)	107,571 (17.09)	
Maule	762,796 (6.8)	38,424 (5)		73,288 (9.608)	45,159 (5.92)	508,071 (66.61)	136,278 (17.87)	
Ñuble	348,527 (3.1)	14,062 (4)		32,392 (9.294)	16,905 (4.85)	236,007 (67.72)	63,223 (18.14)	
Biobío	1,054,437 (9.4)	54,087 (5.1)		101,632 (9.639)	61,591 (5.841)	686,255 (65.08)	204,959 (19.44)	
Araucanía	683,250 (6.1)	41,357 (6.1)		86,887 (12.72)	45,239 (6.621)	439,443 (64.32)	111,681 (16.35)	
Los Ríos	273,268 (2.4)	17,420 (6.4)		32,246 (11.8)	17,606 (6.443)	179,344 (65.63)	44,072 (16.13)	
Los Lagos	584,765 (5.2)	25,950 (4.4)		76,188 (13.03)	47,534 (8.129)	372,198 (63.65)	88,845 (15.19)	
Aysén	61,227 (0.55)	2,199 (3.6)		7,143 (11.67)	6,980 (11.4)	38,864 (63.48)	8,240 (13.46)	
Magallanes	94,684 (0.85)	4,092 (4.3)		11,265 (11.9)	10,684 (11.28)	53,365 (56.36)	19,370 (20.46)	

RESULTS

4.785.749 people immunized with CoronaVac were included.

2.017.878 received one booster shot.



RESULTS

1ª ENTREGA DE RESULTADOS ESTUDIO DOSIS DE REFUERZO

INCREASED EFFECTIVINESS AGAINST COVID-19

14 DAYS AFTER THE BOOSTER SHOT

Booster shot CoronaVac	Booster shot Pfizer-BioNTech	Booster shot AstraZeneca
56% to 80%	56% to 90%	56% to 93%

1ª ENTREGA DE RESULTADOS ESTUDIO DOSIS DE REFUERZO

INCREASED EFFECTIVINESS AGAINST HOSPITALIZATION

14 DAYS AFTER THE BOOSTER SHOT

Booster shot CoronaVac	Booster shot Pfizer-BioNTech	Booster shot AstraZeneca
84% to 88%	84% to 87%	84% to 96%

CONCLUSION

1ra ENTREGA DE RESULTADOS ESTUDIO DOSIS DE REFUERZO

- The three vaccines used as a booster notably **increased the effectiveness against Covid-19 and related hospitalizations.**
- These results support the decission to initiate a boosting program among people immunized with inactivated vaccines.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