

INTRODUCTION AND OBJECTIVES

Recommendations on COVID-19 vaccine composition and vaccination schedules should be regularly reviewed based on the available scientific evidence. The aim of this study is to provide COVID-19 vaccine-effectiveness (VE) estimates in the changing epidemiological context of the 2022/23 respiratory season.

MATERIALS AND METHODS

- **Study population:** Patients aged ≥18 years consulting primary care physicians for acute respiratory infection in Hungary.
- **Study period:** Omicron era, from ISO week 36 in 2022 to ISO week 12 in 2023 (based on onset of symptoms).
- **Test-negative case-control design:** cases = SARS-CoV-2 PCR positive; controls = SARS-CoV-2 PCR negative
- **Vaccinated:** Full primary series vaccination plus at least one booster, symptom onset ≥14 days after vaccination. **Unvaccinated:** never received a COVID-19 vaccine as of symptom onset.
- **Study sites:** 68 GP practices from Hungary.
- **Analysis:** logistic regression, $CVE = 1 - (\text{odds of vaccination in cases} / \text{odds of vaccination in controls}) \times 100$,
- Adjusted for age, presence of chronic conditions, prior COVID-19 test related to current symptoms
- CVE estimates for at least one booster VE, using unvaccinated patients as the reference group, by time categories since vaccination overall and by age group (18-59, 60+ years).

Table 1.

COVID-19 vaccine effectiveness estimates for at least first booster vaccination among 18+ adults, VEBIS primary care study, Hungary, September 2022 - March 2023.

Characteristic	SARS-CoV-2 cases (n = 247)	Test-negative controls (n = 1,073)
Age, median [IQR]	53 [41-68]	51 [37-66]
Age group (years), n(%)		
18-59	137 (55)	693 (64)
60+	110 (45)	380 (36)
Missing, n	0	0
Sex, n (%)		
Female	146 (59)	650 (60)
Missing, n	0	0
Chronic condition, n (%)		
Presence of at least one chronic condition	113 (46)	497 (46)
Missing, n	0	3
Vaccination status, n (%)		
Unvaccinated	57 (23)	234 (22)
Full primary series + 1 booster (at least)	190 (77)	839 (78)
Missing, n	0	0
Previous Covid-19 test, n (%)		
Previous test	98 (39)	215 (20)

CONCLUSIONS

- VE estimate was moderate-high (56.5%) among 60+, but low among the younger age groups. Possible selection bias caused by COVID-19 test before consulting the GP seems not to be an issue concerning the present study results.
- We found no evidence of protection of self-reported previous COVID-19 (60-365 days before present infection) against re-infection, without vaccination.
- Self-reported previous COVID-19 within 1 year before symptom onset plus vaccination provided high protection among 18+ population, and even higher among 60+ population.
- Limitation: not enough sample size for further stratification (wide, overlapping confidence intervals).

Figure 1.

Distribution of SARS-CoV-2-positive samples by variant groups and week of sampling, COVIDVE GP project, from week 38, 2022 to week 13, 2023, (N=196 samples)

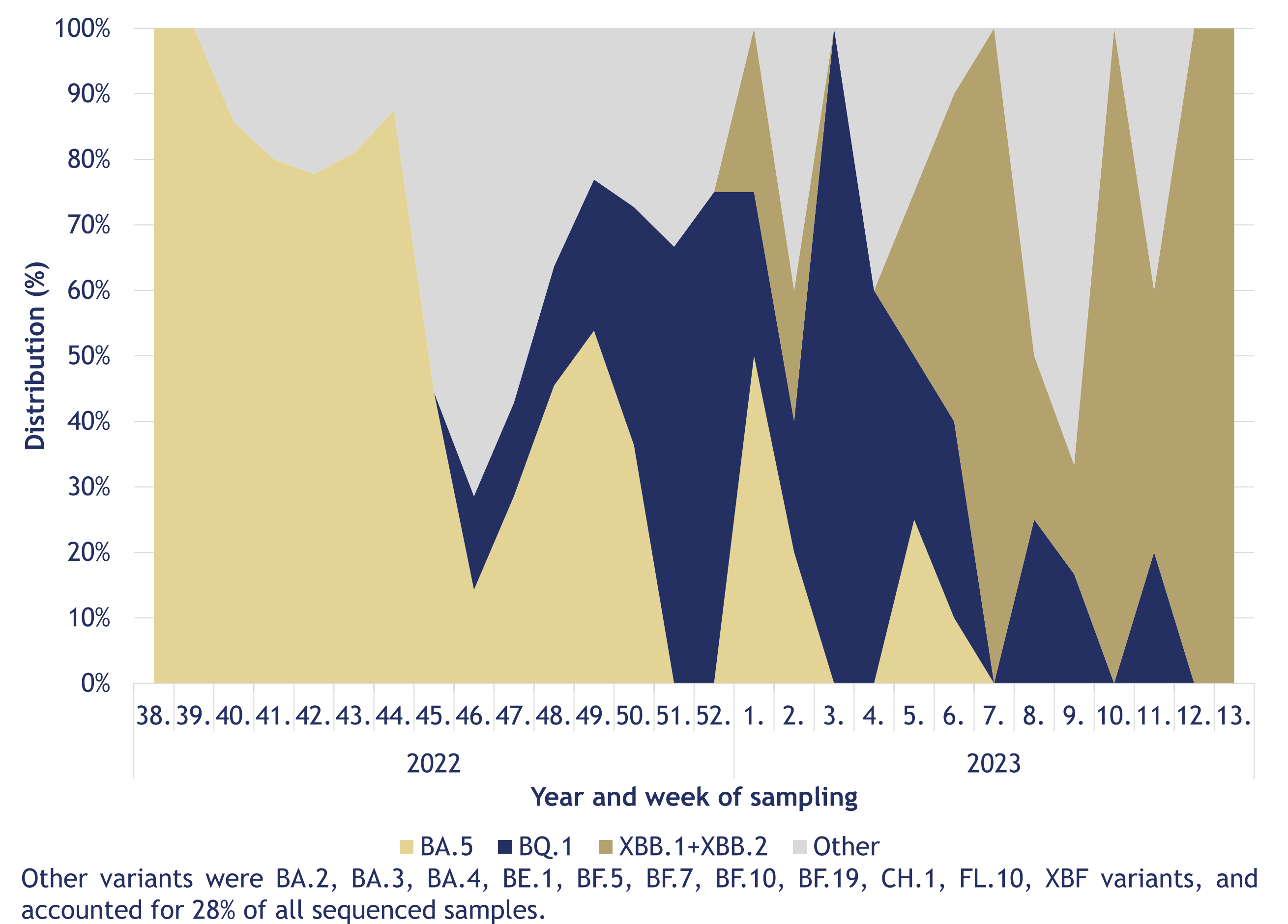


Figure 2.

COVID-19 vaccine effectiveness estimates for at least first booster vaccination among 18+ adults, and among 18+ adults with no previous testing. VEBIS primary care study, Hungary, September 2022 - March 2023.

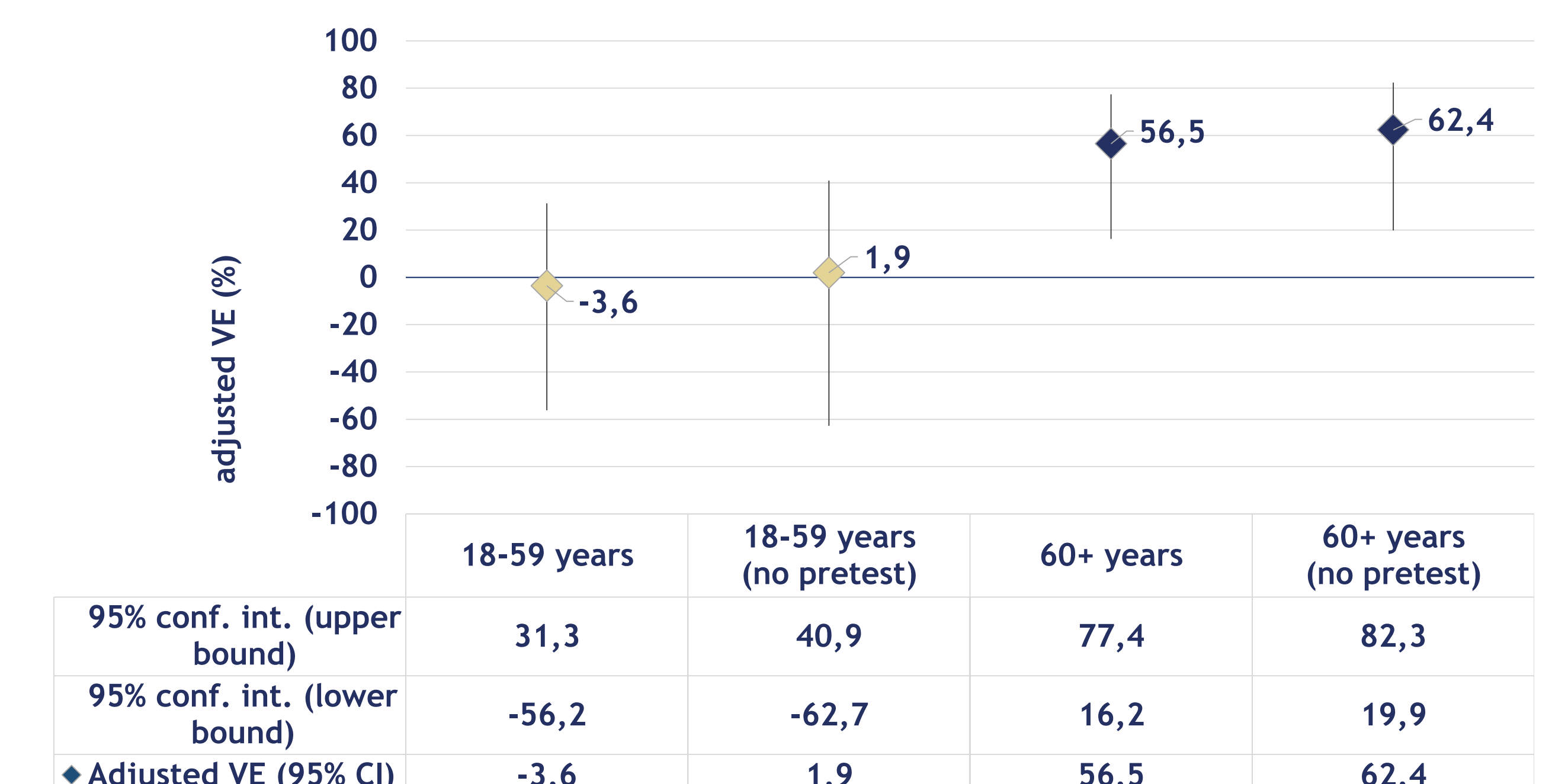


Figure 3.

Protection conferred by prior infection and/or vaccine; COVID-19 vaccine effectiveness for at least first booster vaccination among 18+ adults (reference group: no prior infection and no vaccination), VEBIS primary care study, Hungary, September 2022 -March 2023.

