

SUPPLEMENTARY INFORMATION

Immunogenicity and safety of SARS-CoV-2 mRNA vaccines in a cohort of patients with type 1 diabetes

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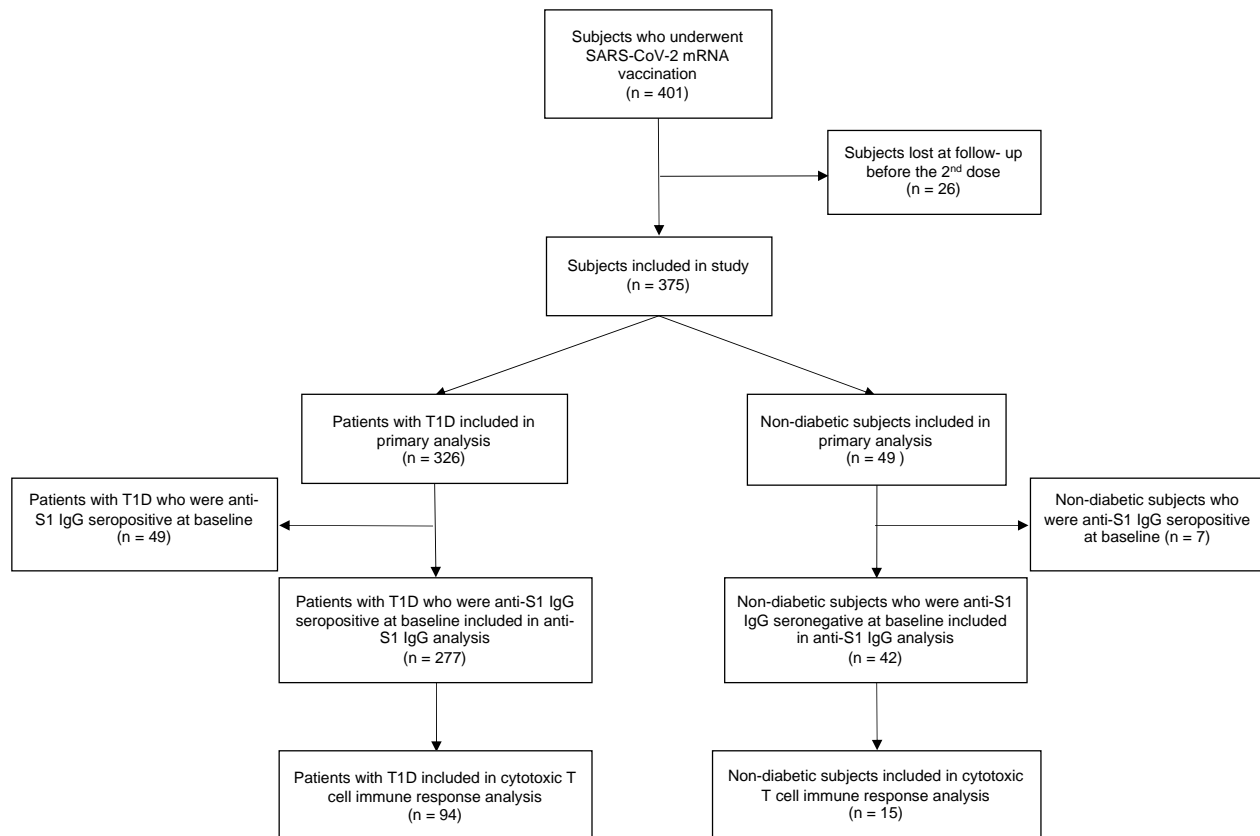
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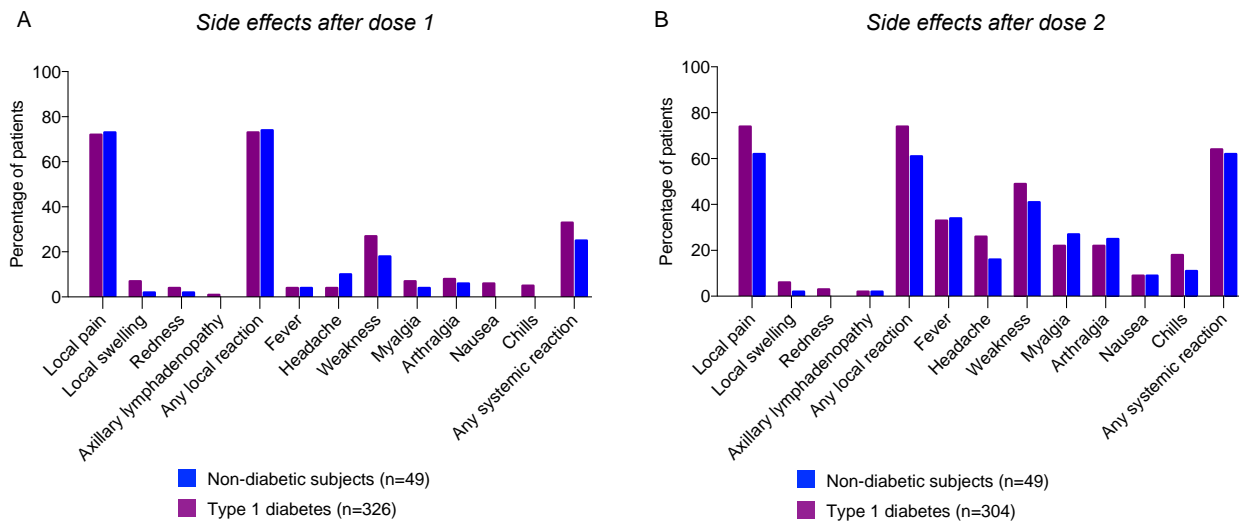
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Supplementary Figure 1. Study flow-chart.



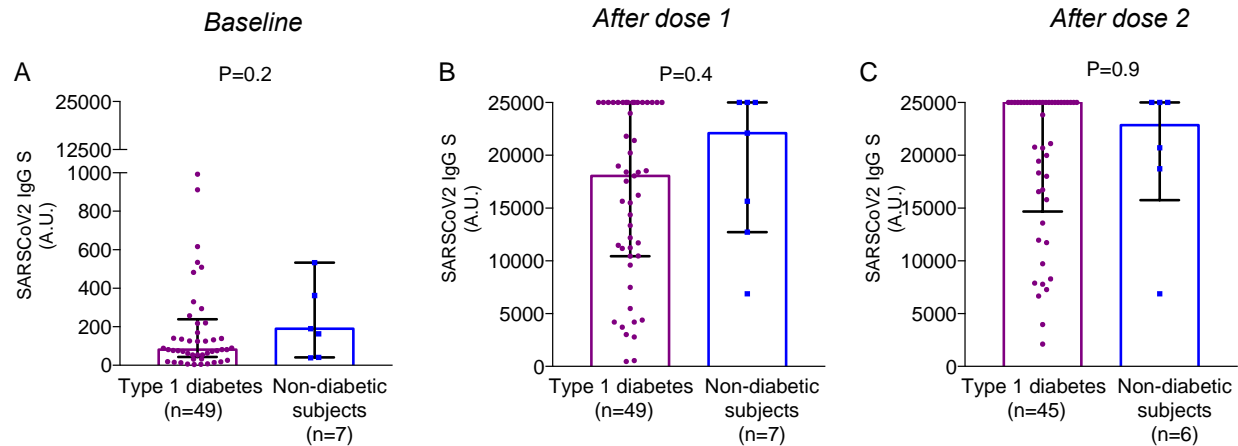
Supplementary Figure 2. Local and systemic adverse effects in T1D patients and non-diabetic subjects who received two doses of SARS-CoV-2 mRNA vaccine.



(A, B). Bar graphs representing percentage of T1D patients and non-diabetic subjects reporting local and systemic reactions after dose 1 (A) and after dose 2 (B) of the SARS-CoV-2 mRNA vaccines. Assessment ‘after dose 1’ was performed 3-4 weeks after the first dose, and assessment ‘after dose 2’ was performed 4 weeks after the second dose.

Abbreviations: T1D, type 1 diabetes.

Supplementary Figure 3. Anti-SARS-CoV-2 antibody response in patients with T1D and non-diabetic subjects who were seropositive before vaccination.



(A, B, C). Anti-SARS-CoV-2 antibody levels in SARS-CoV-2-seropositive patients with T1D and non-diabetic subjects at baseline (A), after dose 1 (B), and after dose 2 (C). Anti-SARS-CoV-2 antibody titers are reported as median with interquartile range. ‘After dose 1’ was 3-4 weeks after the first dose, and ‘after dose 2’ was 4 weeks after the second dose.

SUPPLEMENTARY TABLES

Supplementary Table 1. Distribution of mRNA SARS-CoV-2 vaccines in the study population.

	BNT162b2	mRNA-1273
T1D – n of patients (%)	168 (51.5)	158 (49.5)
Controls – n of patients (%)	29 (59.1)	20 (40.9)

Abbreviations: n, number; T1D, type 1 diabetes; BNT162b2 Pfizer mRNA SARS-CoV-2 vaccine administered at day 0 and 21; mRNA-1273, Moderna mRNA SARS-CoV-2 vaccine administered at day 0 and 28.

Supplementary Table 2. Multivariable analysis of factors associated with the development of cytotoxic response in the whole study population after having received the first and the second dose of the SARSCoV2 mRNA vaccine.

<i>Cytotoxic response after dose 1</i>		
Variables	Regression coefficient (95% CI)	P value
Type 1 diabetes	-3.68 (-5.49 to -1.88)	0.0001
Gender (Male)	-0.01 (-0.97 to 0.93)	0.96
Age (years)	-0.04 (-0.08 to -0.01)	0.01
Cardiovascular disease	1.92 (-0.57 to 4.47)	0.12
Hypertension	-0.31 (-1.99 to 1.36)	0.71
Autoimmune thyroid disease	-0.25 (-1.45 to 0.95)	0.68
<i>Cytotoxic response after dose 2</i>		
Variables	Regression coefficient (95% CI)	P value
Type 1 diabetes	-1.76 (-3.22 to -0.30)	0.01
Gender (Male)	0.42 (-0.61 to 1.46)	0.42
Age (years)	-0.02 (-0.05 to 0.01)	0.21
Hypertension	0.43 (-1.01 to 1.88)	0.55
Autoimmune thyroid disease	-0.78 (-2.43 to 0.86)	0.35

Abbreviations: CI, confidence interval; after dose 1, the first dose; after dose 2, after the second dose of the SARS-CoV-2 mRNA vaccines.

Supplementary Table 3. Continuous glucose monitoring in patients with T1D receiving the SARS-CoV-2 mRNA vaccine at three timepoints.

	Baseline (n=150)	After the 1st dose (n=150)	After the 2nd dose (n=150)	p value
<i>Time in range %</i>	64.1 ± 18.8	65.0 ± 18.2	62.6 ± 18.6	0.91 [^] ; 0.76 [↓] ; 0.51 [⊥]
<i>Time above range %</i>	32.9 ± 19.8	32.2 ± 18.7	34.3 ± 19.1	0.95 [^] ; 0.79 [↓] ; 0.60 [⊥]
<i>Time below range %</i>	3.0 ± 2.6	2.9 ± 3.2	2.9 ± 3.3	0.98 [^] ; 0.99 [↓] ; 0.99 [⊥]
<i>Use of CGM %</i>	91.7 ± 12.2	91.0 ± 13.0	89.2 ± 16.7	0.89 [^] ; 0.30 [↓] ; 0.56 [⊥]
<i>estimated HbA1c [§] %</i>	7.2 ± 0.8	7.2 ± 0.8	7.3 ± 0.8	0.99 [^] ; 0.93 [↓] ; 0.93 [⊥]
<i>Coefficient of variation [†] %</i>	33.2 ± 6.7	33.2 ± 6.4	34.5 ± 6.8	0.99 [^] ; 0.33 [↓] ; 0.34 [⊥]
<i>Glucose level (mg/dl)</i>	161.1 ± 30.0	160.6 ± 30.0	163.6 ± 31.0	0.99 [^] ; 0.76 [↓] ; 0.69 [⊥]

Plus-minus values are means ± SD.

[^]Baseline vs “After the 1st dose”; [↓]Baseline vs. “After the 2nd dose”; [⊥]“After the 1st dose” vs. “After the 2nd dose”; [§] Complete data from 122 patients; [†] Complete data from 118 patients.

Abbreviations: CGM, continuous glucose monitoring; HbA1c, glycated hemoglobin.