FIGURE S1. Formation of the discontinuation cohort and matching with users and non-users at the time of discontinuation.
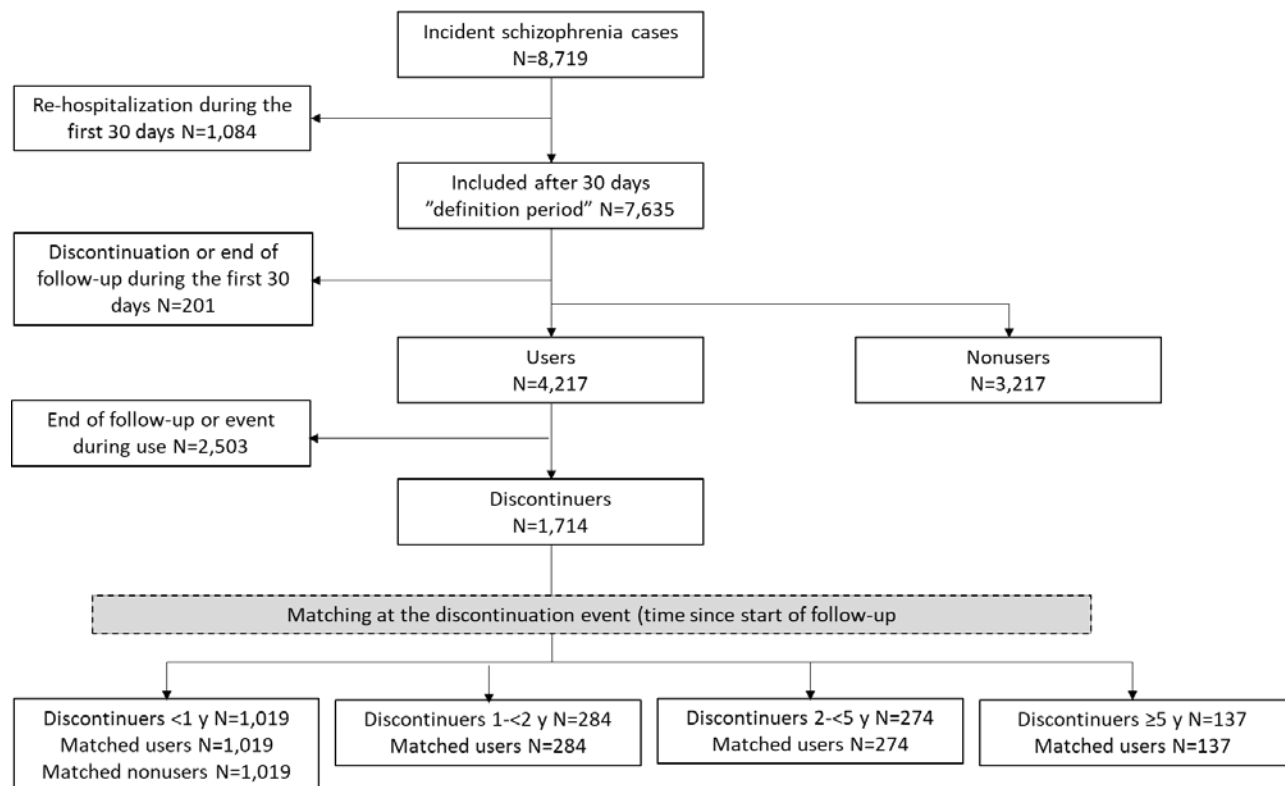
FIGURE S2. Study design for identification of discontinuers and their matched persons.
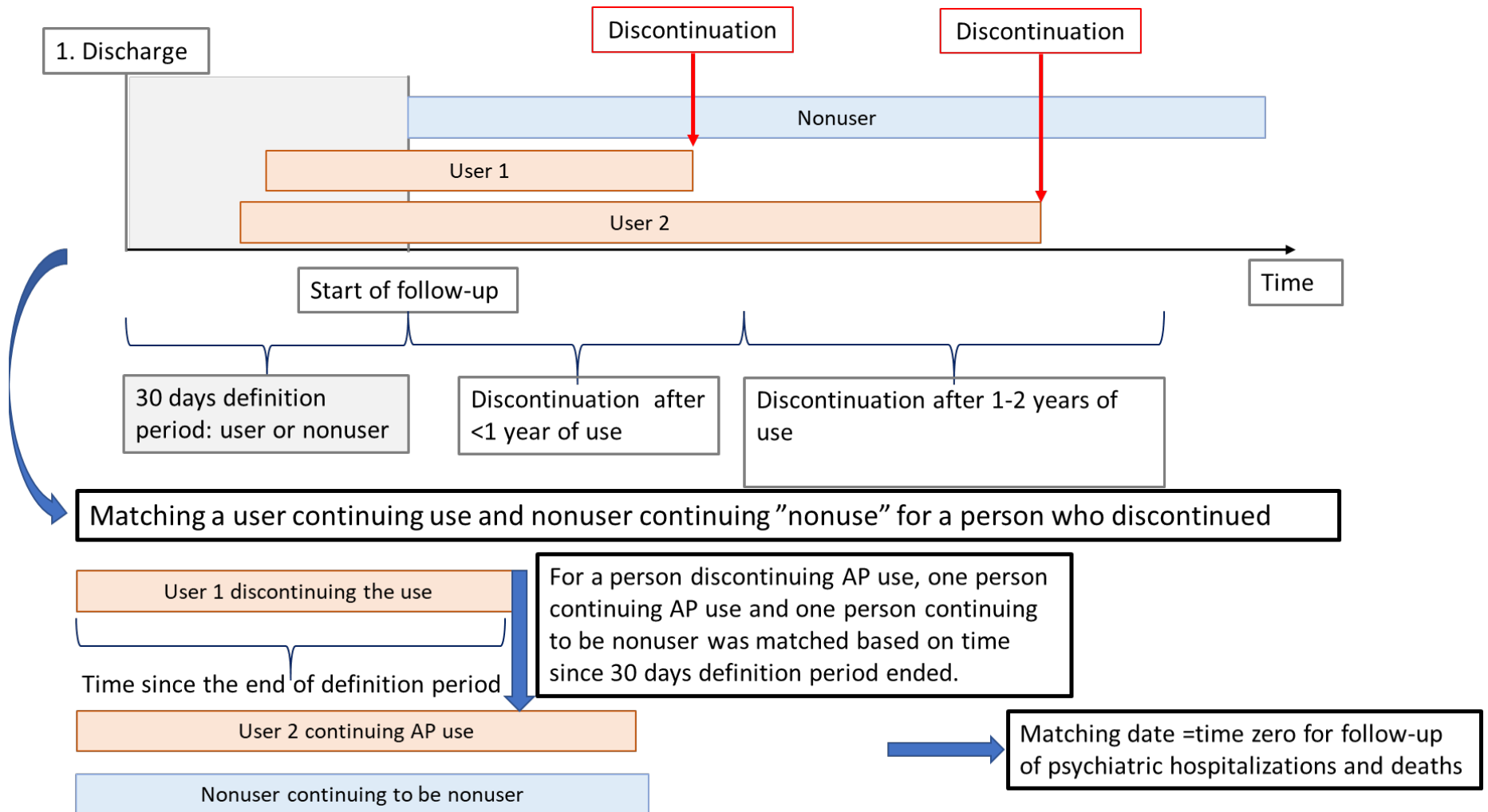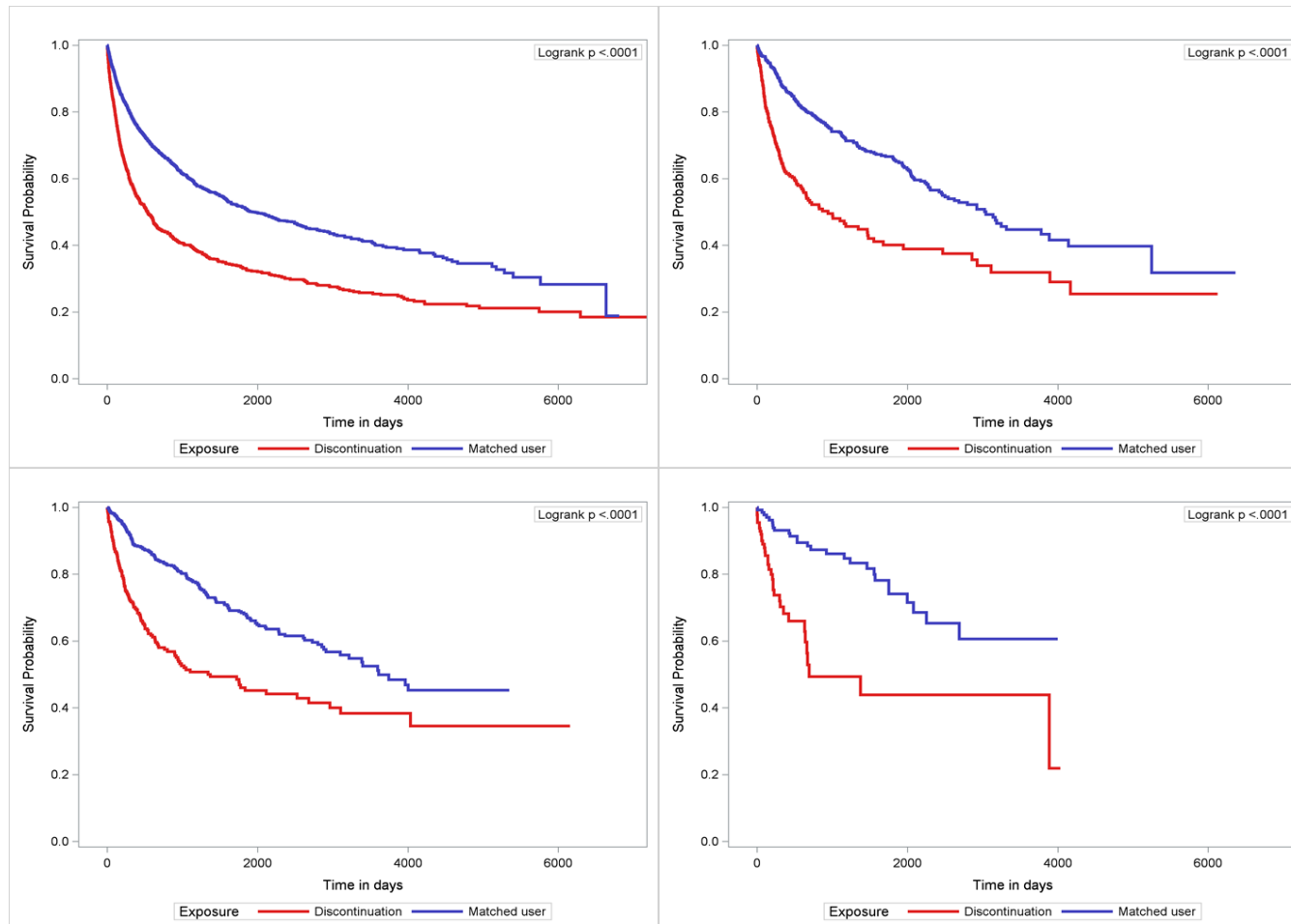
FIGURE S3. The Kaplan-Meier curves for treatment failure (psychiatric re-hospitalization or death) among 4 discontinuation groups when the whole incident cohort is included (N = 23,499, without washout period for antipsychotic use). The hazard ratios and 95% confidence intervals are shown in Supplementary Table 1.

a) Discontinuation within <1 year of use, b) discontinuation after 1-<2 years of use, c) discontinuation after 2–<5 years of use, and d) discontinuation after ≥5 years of use (median 8.7 years, IQR 6.6–11.6 years).

FIGURE S4. Risk of re-hospitalization outcome for discontinuation groups when the whole incident cohort is included (N = 23,499, without washout period for antipsychotic use). The hazard ratios and number of events and patient years are shown in Table S3.
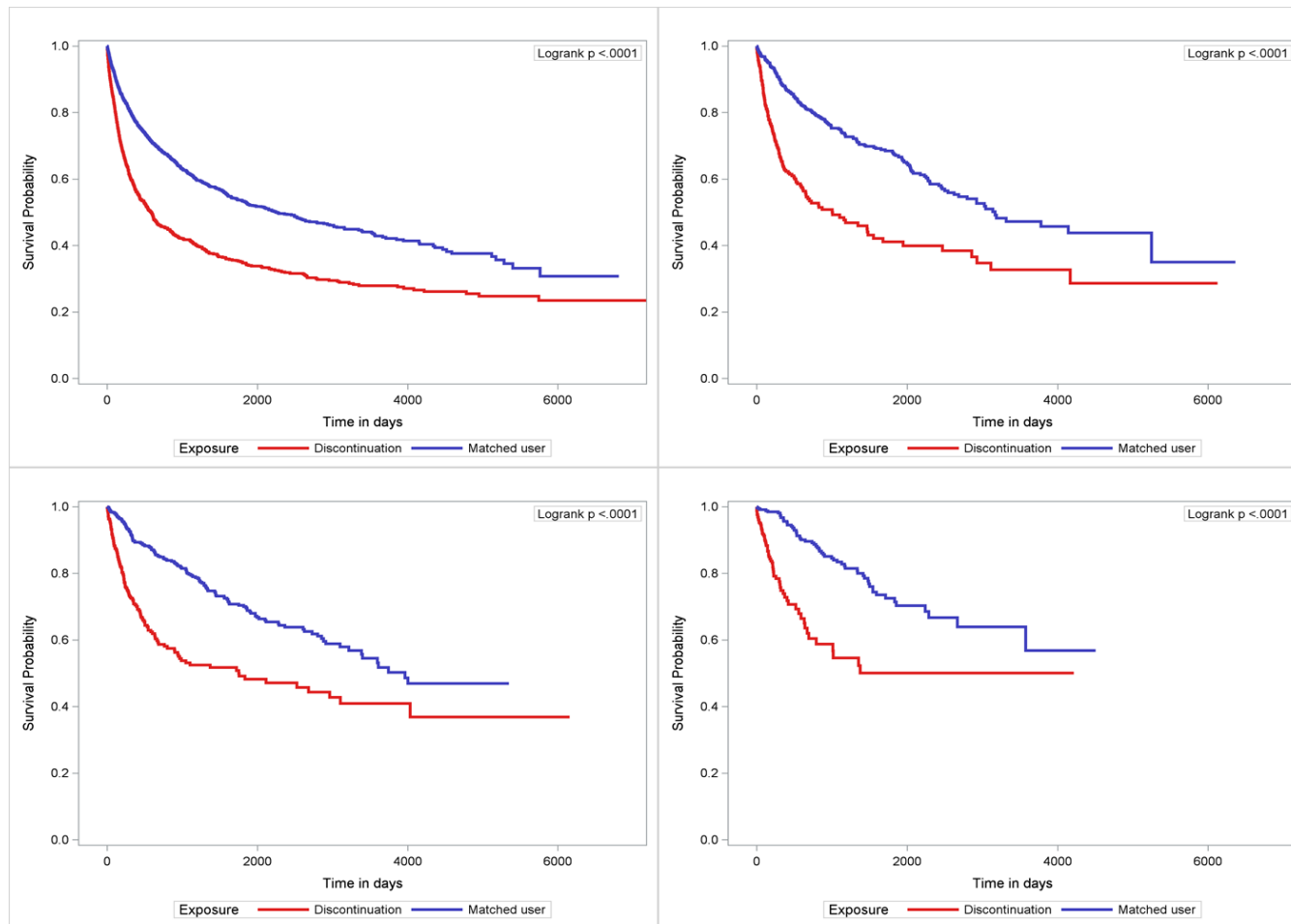
a) Discontinuation within <1 year of use, b) discontinuation after 1–<2 years of use, c) discontinuation after 2–<5 years of use, and d) discontinuation after ≥5 years of use (median 8.7 years, IQR 6.6–11.6 years).

TABLE S1. The risk of treatment failure (psychiatric re-hospitalization or death) after discontinuation of antipsychotic use compared with matched individuals who continue use of antipsychotic, including the whole incident cohort (N = 23,499) without washout period for antipsychotic use. The maximum follow-up after discontinuation was 20 years.

Discontinuation after stability in outpatient care (after discharge from the first hospital treatment)	N	Age at discontinuation (mean, SD)	Sex (% males)	Median (IQR) time of follow-up (days)	Events	Person-years	Incidence rate per 100 person-years (95% CI)	Age- and gender adjusted HR (95% CI)
Immediately								
Non-users	4459	42.7 (19.5)	57.8	408 (120–1269)	2661	12,528	21.2 (21.2–21.3)	1.27 (1.21–1.32)
Antipsychotic users	15220	40.8 (16.7)	51.6	376 (97–1200)	6839	39,067	17.5 (17.4–17.5)	1.00
<1 year								
Discontinuers	2563	37.9 (15.9)	52.8	122 (37–378)	1027	3393	30.3 (30.0–30.5)	1.97 (1.73–2.24)
Matched users	2563	41.3 (16.2)	51.0	509 (166–1350)	979	6969	14.0 (13.9–14.1)	1.00
1-<2 years								
Discontinuers	710	35.7 (14.2)	52.1	134 (50–346)	215	763	28.2 (27.8–28.6)	3.41 (2.45–4.75)
Matched users	710	42.6 (15.7)	51.0	809 (293–1884)	218	2367	9.2 (9.1–9.3)	1.00
2-<5 years								
Discontinuers	722	35.9 (13.7)	51.8	133 (49–349)	185	891	20.8 (20.5–21.1)	3.22 (2.25–4.60)
Matched users	722	42.8 (14.5)	55.0	887 (339–1820)	188	2468	7.6 (7.5–7.7)	1.00
≥5 years (median 7.9 years)								
Discontinuers	352	37.9 (13.7)	45.5	124 (53–305)	73	349	20.9 (20.5–21.4)	4.61 (2.23–9.50)
Matched users	352	46.9 (12.8)	51.7	809 (361–1571)	64	1027	6.2 (6.1–6.4)	1.00

TABLE S2. The risk of psychiatric re-hospitalization after discontinuation of antipsychotic use compared with matched individuals who continue use of antipsychotic. The maximum follow-up time was 20 years.

Discontinuation after stability in outpatient care (after discharge from the first hospital treatment)	N	Events	Person-years	Incidence rate per 100 person-years (95% CI)	Age- and gender adjusted HR (95% CI)
Immediately					
Non-users	3217	1654	9,669	17.1 (17.0–17.2)	1.62 (1.51–1.74)
Antipsychotic users	4217	1377	11,767	11.7 (11.6–11.8)	1.00
<1 year					
Discontinuers	1019	420	1957	21.5 (21.3–21.7)	2.17 (1.74–2.70)
Matched users	1019	294	2900	10.1 (10.0–10.3)	1.00
1–<2 years					
Discontinuers	284	88	382	22.8 (22.3–23.3)	3.04 (1.73–5.33)
Matched users	284	82	915	9.0 (8.8–9.2)	1.00
2–<5 years					
Discontinuers	274	76	421	18.1 (17.7–18.5)	2.87 (1.66–4.97)
Matched users	274	64	1123	5.7 (5.6–5.8)	1.00
≥5 years					
Discontinuers	137	33	139	23.8 (23.0–24.7)	7.04 (2.07–23.97)
Matched users	137	27	465	5.8 (5.6–6.0)	1.00

TABLE S3. The risk of psychiatric re-hospitalization after discontinuation of antipsychotic use compared with matched individuals who continue use of antipsychotic, with maximum follow-up time after discontinuation 20 years. The whole incident cohort (N = 23,499) without washout period for antipsychotic use was included.

Discontinuation after stability in outpatient care (after discharge from the first hospital treatment)	N	Events	Person-years	Incidence rate per 100 person-years (95% CI)	Age- and gender adjusted HR (95% CI)
Immediately					
Non-users	4459	2441	12,528	19.5 (19.4–19.6)	1.24 (1.18–1.30)
Antipsychotic users	15220	6562	39,067	16.8 (16.7–16.8)	1.00
<1 year					
Discontinuers	2563	970	3393	28.6 (28.4–28.8)	1.92 (1.68–2.19)
Matched users	2563	924	6969	13.3 (13.2–13.3)	1.00
1–<2 years					
Discontinuers	710	208	763	27.3 (26.9–27.6)	3.52 (2.51–4.94)
Matched users	710	204	2367	8.6 (8.5–8.7)	1.00
2–<5 years					
Discontinuers	722	175	891	19.6 (19.3–19.9)	3.07 (2.13–4.43)
Matched users	722	175	2468	7.1 (7.0–7.2)	1.00
≥5 years					
Discontinuers	352	68	349	19.5 (19.0–20.0)	4.47 (2.17–9.21)
Matched users	352	60	1027	5.8 (5.7–6.0)	1.00

TABLE S4. Percentage of persons using clozapine or long-acting injectable (LAI) antipsychotics before time 0 (indicating start of follow-up for treatment failure and psychiatric re-hospitalization).

	Clozapine use ever before time 0, % (95% CI), N	LAI use ever before time 0, % (95% CI), N
<1 year		
Discontinuers	9.1 (7.5–11.1), 93	12.4 (10.5–14.5), 126
Matched users	18.6 (16.4–21.2), 190	14.4 (12.4–16.7), 147
1-<2 years		
Discontinuers	8.1 (5.5–11.9), 23	15.8 (12.1–20.5), 45
Matched users	23.6 (19.0–28.9), 67	10.2 (7.2–16.7), 29
2-<5 years		
Discontinuers	14.2 (10.6–18.9), 39	14.2 (10.6–18.9), 39
Matched users	26.3 (21.4–31.8), 72	13.9 (10.3–18.5), 38
≥5 years		
Discontinuers	13.1 (8.5–19.8), 18	7.3 (4.0–12.9), 10
Matched users	22.6 (16.4–30.3), 31	7.3 (4.0–12.9), 10

TABLE S5. Risk of death between those discontinuing antipsychotic use <1 year of use, and compared with matched users and matched nonusers. The follow-up for mortality analyses was restricted to the first 6000 days due to sparsity of data, and because proportional hazards assumption did not hold after this time point. Due to very low number of events, HRs were not calculated for other discontinuation categories than the largest one (discontinuation <1 years of use).

	N	Events	Person-years	Incidence rate per 100 person-years (95% CI)	Age- and gender adjusted HR (95% CI)
Matched non-user	1019	49	2785	1.76 (1.71–1.81)	3.14 (1.29–7.68)
Discontinuation <1 y	1019	26	1956	1.33 (1.28–1.38)	2.74 (1.09–6.89)
Matched user	1019	16	2900	0.55 (0.52–0.58)	1.00
1-<2 years					
Discontinuers	284	3	381	0.79 (0.70–0.88)	
Matched users	284	11	915	1.20 (1.14–1.27)	
2-<5 years					
Discontinuers	274	4	421	0.95 (0.86–1.04)	
Matched users	274	8	1123	0.71 (0.66–0.76)	
≥5 years (median 7.9 years)					
Discontinuers	137	2	139	1.44 (1.24–1.64)	
Matched users	137	0	465	na	