SUPPLEMENTARY DATA

Selection Criteria

Inclusion Criteria

- Patients had a minimum of two diagnoses of diabetes (International Classification of Diseased, 9th revision, Clinical Modification codes [codes]: 250.xx) at any time up to the index date or had one diagnosis of diabetes and one anti-diabetes drug prescription.
- Patients had 12-months of continuous enrollment before the index date and at least 24-months of continuous enrollment after the index date.
- Patients had at least one U-500R prescription claim during the identification period.
- Patients had no prescription claim for U-500R insulin in 12 months before the index date.

Exclusion Criteria

- Diagnosis of T1DM
- Patients' data that had both T1DM and T2DM diagnosis, had no oral anti-diabetic drug (OAD) other than metformin, and the ratio between the number of T1DM claims (code 250.x1 or 250.x3) and T2DM claims (250.x0 or 250.x2) was >0.5 were classified as T1DM
- Diagnosis of any of the following in 12 months before the index date
    - Secondary diabetes (code 249.xx)
    - Gestational diabetes (code 648.8x)
    - Diabetes mellitus complicating pregnancy, childbirth, or the puerperium (648.0x)
    - Pregnancy (codes 630.xx-679.xx, v22.x-v24.x)
    - Other abnormal glucose (code 790.29)
    - Neonatal diabetes mellitus (code 775.1)

SUPPLEMENTARY DATA

Supplementary Table 1. Persistence and adherence to insulin therapy using claims gap method in patients with T2DM

Persistence Study	Insulin type	N	Persistence definition	Persistence at one year
Bonafede et al 2010	Basal	15,255	90-day gap	26.5%
Bonafede et al 2010	Premix	2732	90-day gap	35.0%
Cooke et al 2010	Basal	1769	60-day gap	28.7%
Perez-Nieves et al 2016	Basal	19,110	30-day gap	19.8%
Ascher-Svanum et al 2014	Basal or mix	74, 399	30-day gap	18.0%
This study	U-500R	1582	60-day gap	46.3%

Adherence Study	Insulin type	N	Adherence method	Adherence
Wang et al 2013	glargine	356	MPR/adj MPR*	50%/67%
Wang et al 2013	NPH	178	MPR/adj MPR	45%/61%
Buysman et al 2011	Levemir FlexPen	1082	Adj MPR	53%
Buysman et al 2011	NPH	794	Adj MPR	38%
Miao et al 2013	Glargine + Rapid acting	373	Adj MPR	77%
Miao et al 2013	Premix	373	Adj MPR	66%
Eby et al 2013	U-500R	684	PDC	65.2%
Eby et al 2013	High dose U-100	684	PDC	39.5%
Eby et al 2014 (inc T1DM)	U-500R	1039	PDC	65.0%
Eby et al 2014 (inc T1DM)	High dose U-100	1039	PDC	47.6%
This study	U-500R	1582	MPR	78.6%

*MPR is a measure of adherence. Adj, adjudication; MPR, medication possession ratio; NPH, Neutral Protamine Hagedorn; PDC, proportion of days covered.

SUPPLEMENTARY DATA

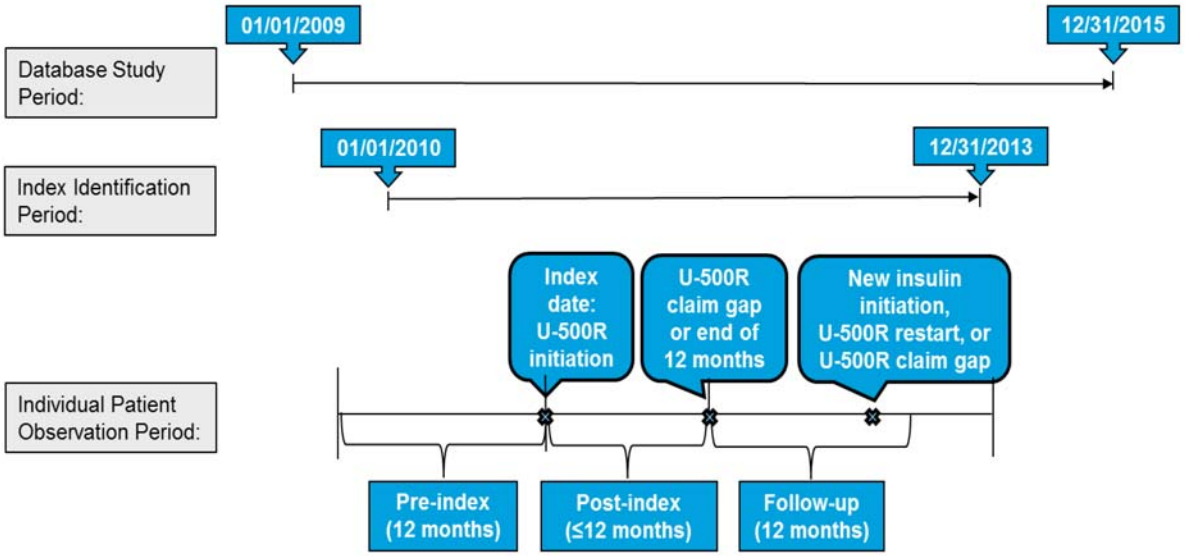
Supplementary Table 2. Effect of age on resumption of U-500R or initiation of new insulin in follow-up period among those with U-500R treatment gap in post-index period

		<65 Years (N=689)	≥65 Years (N=160)	Total (N=849)
1	Not restarted U-500 and not initiated new insulin	50 (7.3%)	10 (6.3%)	60 (7.1%)
2	Restarted U-500 and not initiated new insulin	339 (49.2%)	63 (39.4%)	402 (47.3%)
3	Not restarted U-500 and Initiated new insulin	138 (20.0%)	49 (30.6%)	187 (22.0%)
4	Restarted U-500 and initiated new insulin	162 (23.5%)	38 (23.8%)	200 (23.6%)

1. P chi-square test=0.1495 for distributions over 4 categories between age <65 and ≥65 years
2. P chi-square test=0.0554 for comparing restart U-500R (yes/no) between age <65 and ≥65 years

SUPPLEMENTARY DATA

Supplementary Figure 1. Study Design



SUPPLEMENTARY DATA

Supplementary Figure 2. Total Daily Dose of U-500R by Fill