Profile of Patients With Type 1 or Type 2 Diabetes Treated With Insulin Lispro 100 units/mL Junior KwikPen in Routine Clinical Practice in Spain

Miriam Rubio-de Santos[1], Natalia Duque[1], Esther Artime[1], Elena Caveda[1], Erik Spaepen[2], Silvia Díaz[1], F. Javier Ampudia-Blasco[3]

[1]Eli Lilly and Company, Alcobendas, Madrid, Spain; [2]HaaPACS GmbH, Schriesheim, Germany; [3]Endocrinology and Nutrition Department, Clinic University Hospital Valencia, INCLIVA Research Foundation, Valencia, Spain

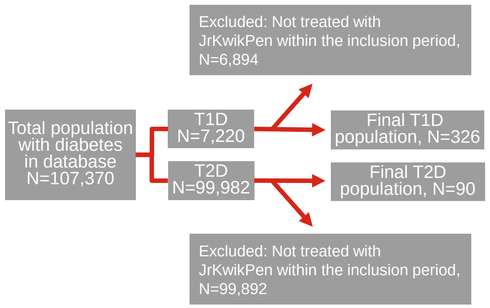
BACKGROUND

- Insulin lispro 100 units/ml Junior KwikPen (JrKwikPen) is a disposable pre-filled pen that delivers 0.5–30 units (U) of insulin in increments of 0.5 U
- JrKwikPen allows for more accurate insulin dose adjustment and more precise glycaemic control thus being suitable for children, adolescents or adults with higher sensitivity to insulin who require finer insulin doses (the elderly, pregnant women, athletes, etc)

OBJECTIVE

- **Primary objective is to describe sociodemographic, clinical, and treatment characteristics of patients with diabetes who initiate treatment with JrKwikPen in real world practice in Spain**
- Additionally, these aspects were described in predefined subgroups by type of diabetes and age ranges

PATIENT DISPOSITION



- Gestational diabetes was investigated but no patients with gestational diabetes were found

KEY RESULTS

Table 1. Sociodemographic and Clinical Characteristics

	T1D				T2D		
Variable	<18 N=107	18-64 N=194	≥65 N=25	Total N=326	18-64 N=64	≥65 N=26	Total N=90
Age (years)	8.9 (4.2)	40.4 (11.8)	71.2 (5.7)	32.5 (20.7)	47.4 (11.5)	75.5 (7.6)	55.5 (16.6)
Gender (male), N (%)	53 (49.5%)	67 (34.5%)	5 (20.0%)	125 (38.3%)	20 (31.3%)	11 (42.3%)	31 (34.4%)
Time since first diabetes record[a] (years)	1.0 (2.1)	8.1 (4.4)	8.6 (4.5)	5.8 (5.1)	7.8 (4.1)	8.3 (4.4)	7.9 (4.2)
Newly diagnosed,[b] N (%)	57 (53.3%)	8 (4.1%)	4 (16.0%)	69 (21.2%)	-	2 (7.7%)	2 (2.2%)
Weight (kg)	30.6 (14.4)	61.7 (11.7)	68.6 (13.2)	50.1 (20.3)	69.2 (13.9)	65.6 (18.7)	68.1 (15.4)
BMI (kg/m^2)	17.3 (2.4)	22.8 (3.0)	26.1 (3.8)	20.9 (4.2)	25.1 (4.2)	25.4 (5.5)	25.2 (4.6)
HbA1c (%)	9.5 (3.9)	7.7 (1.5)	7.6 (1.1)	7.8 (1.7)	7.9 (1.5)	8.3 (1.5)	8.0 (1.5)
Presence of diabetes associated comorbidities, N (%)	5 (4.7%)	65 (33.5%)	21 (84.0%)	91 (27.9%)	36 (56.3%)	22 (84.6%)	58 (64.4%)
Abnormal blood chemistry	4 (3.7%)	16 (8.2%)	4 (16.0%)	24 (7.4%)	8 (12.5%)	4 (15.4%)	12 (13.3%)
Hyperlipidaemia	-	38 (19.6%)	11 (44.0%)	49 (15.0%)	23 (35.9%)	15 (57.7%)	38 (42.2%)
Hypertension	1 (0.9%)	22 (11.3%)	15 (60.0%)	38 (11.7%)	13 (20.3%)	19 (73.1%)	32 (35.6%)
Pregnant, N (%)	-	6 (4.7%)	-	6 (3.0%)	4 (9.1%)	-	4 (6.8%)
Frail patients[c]							
Non-frailty	98 (91.6%)	119 (61.3%)	5 (20.0%)	222 (68.1%)	32 (50.0%)	3 (11.5%)	35 (38.9%)
Pre-frailty	9 (8.4%)	75 (38.7%)	20 (80.0%)	104 (31.9%)	32 (50.0%)	23 (88.5%)	55 (61.1%)

Data are mean (SD) unless otherwise stated. [a]First register of DM diagnosis in 2008 was considered as date of DM diagnosis, but diagnosis could be before 2008. [b]Patients meeting the following criteria were considered newly diagnosed: date of diagnosis coincided with the index date, without any record of diabetes or antidiabetic treatment prior to the index date and antidiabetic treatment records within the 15 days before the index date, but with no record of antidiabetic prescription before the 15-day time window. [c]Evaluation of frailty was performed with the FRAIL scale. Non-frailty (0 components), Pre-frailty (1-2 components), Frailty (>2 components). No patients were identified as "frailty". BMI, body mass index; HbA1c, glycosylated hemoglobin; SD, standard deviation; T1D, type 1 diabetes; T2D, type 2 diabetes

- Only 32.8% of patients with T1D were <18 years old. Among JrKwikPen users 12.3% (T1D, 7.7%; T2D, 28.9%) were ≥65 years, 17.1% patients were newly diagnosed, and 3.8% were pregnant women

CONCLUSIONS

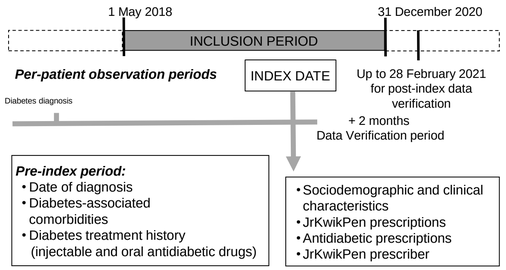
- This is the first study that describes the profile of patients treated with JrKwikPen in clinical practice in Spain
- While the profile of patients initiating JrKwikPen in routine practice was broad, most were women, adults, with T1D, low BMI, and with more associated comorbidities
- JrKwikPen was first prescribed mainly by paediatricians for those <18 years old and by endocrinologists or GPs for those ≥18 years old.
- A decrease in the dose of rapid insulin was observed after JrKwikPen initiation
- **These real-world results suggest the suitability of Humalog JrKwikPen for use in patients who may benefit from finer insulin dose adjustments: children, adolescents, adults, elderly people and pregnant women with either T1D or T2D**

METHODS

Observational, retrospective study conducted using the IQVIA electronic medical records database in Spain

- Patients of all ages with type 1 diabetes (T1D) or type 2 diabetes (T2D) who started treatment with JrKwikPen between 1st May 2018 (launch of JrKwikPen in Spain) and 31st December 2020 were included in the study
- Patient characteristics and concomitant treatment at JrKwikPen initiation (index date) and prior medical/treatment history were analysed descriptively by type of diabetes and age groups

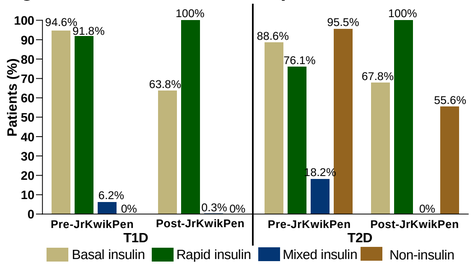
Figure 2. Study design



Per-patient observation periods extended from the DM diagnosis to last data available prior to the index date.

ADDITIONAL RESULTS

Figure 3. Antidiabetic Prescriptions



Pre-JrKwikPen figures were calculated excluding newly diagnosed patients (N=345) while the Post-JrKwikPen figures were calculated using the total population including newly diagnosed patients (N=416). Post-JrKwikPen refers to antidiabetic prescriptions at or Within 60 Days of IL200 Initiation (including Jr KwikPen). ***Limitation:*** Some concomitant prescriptions may have fallen outside this time window. Therefore, some treatments (e.g., basal insulin) may be underrepresented.

- Before JrKwikPen initiation for patients with T2D 79.5% had prescriptions of metformin alone or in combination: metformin alone (68.2%), with DPP4 inhibitors (36.4%) or with SGLT2 inhibitors (6.8%).
- Prescriptions before JrKwikPen initiation within age groups were similar to that of total T1D and T2D
- At or within 60 days of JrKwikPen initiation concomitant basal insulin prescriptions were available for 63.8% (T1D) and 67.8% (T2D) of patients*
- Prescriptions at or within 60 days of JrKwikPen initiation within age groups were similar to that of total T1D and T2D

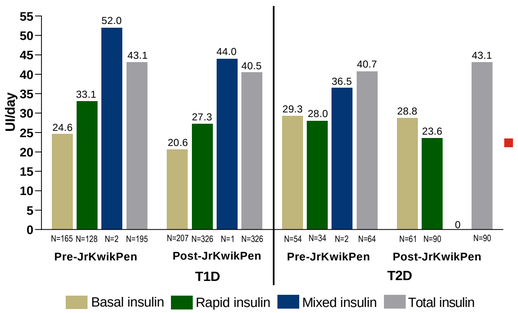
Table 2. JrKwikPen treatment initiation characteristics

Variable	T1D N=326	T2D N=90	Total N=416
Year of JrKwikPen initiation			
2018	55 (16.9%)	14 (15.6%)	69 (16.6%)
2019	153 (46.9%)	40 (44.4%)	193 (46.4%)
2020	118 (36.2%)	36 (40.0%)	154 (37.0%)
Prescriber			
Emergency	1 (0.3%)	-	1 (0.2%)
Endocrinologist	183 (56.1%)	61 (67.8%)	244 (58.7%)
Nephrologist	1 (0.3%)	-	1 (0.2%)
Oncologist	1 (0.3%)	-	1 (0.2%)
Pediatrician*	94 (28.8%)	-	94 (22.6%)
Primary Care	46 (14.1%)	29 (32.2%)	75 (18.0%)
Daily dose JrKwikPen at initiation (UI/day)	26.63 (16.56)	22.58 (13.59)	25.75 (16.03)
Daily dose JrKwikPen at initiation (UI/day) categories			
<15 UI/day	46 (14.1%)	23 (25.6%)	69 (16.6%)
15-<30 UI/day	162 (49.7%)	42 (46.7%)	204 (49.0%)
30-<45 UI/day	79 (24.2%)	19 (21.1%)	98 (23.6%)
45+ UI/day	39 (12.0%)	6 (6.7%)	45 (10.8%)
Injections per day, mean (SD)	2.89 (0.54)	2.89 (0.46)	2.89 (0.52)

Data are N (%) unless otherwise stated. Underweight: (BMI is less than 18.5 kg/m^2), Normal weight (BMI is 18.5 to 24.9 kg/m^2), Overweight (BMI is 25 to 29.9 kg/m^2), Obese (BMI is 30 kg/m^2 or more), Class I Obese (BMI is 30 to 34.9 kg/m^2), Class II Obese (BMI is 35 to 39.9 kg/m^2), Class III Obese (BMI is 40 kg/m^2 or higher). *This category includes primary care and endopediatricians

- JrKwikPen was first prescribed mainly by paediatricians (87.9%) for those <18 years old and by endocrinologists (82.5% 18-64 years and 64.0% >64 years) or GPs (32.2%) for those ≥18 years old

Figure 4. Mean Daily Dose of Insulin Prescribed Within 90 Days Before and Within 60 Days After JrKwikPen Initiation



The Ns shown here represent the number of patients with prescriptions available. Mean doses were calculated based on the number of patients with valid doses

- The mean (SD) total insulin dose pre-index was 43.1 (23.59) and 40.7 (21.61) U/day for T1D and T2D, respectively

DISCLOSURES

- Miriam Rubio, Natalia Duque, Esther Artime, Elena Caveda, Silvia Díaz are employees and shareholders of Eli Lilly and Company. Erik Spaepen is a consultant to Eli Lilly and Company. F. Javier Ampudia-Blasco has received fees for acting as a scientific advisor and speaker for Eli Lilly and Company
- This study was sponsored by Eli Lilly and Company. Medical writing services were provided by Rhea Lewis, Eli Lilly and Company, and was funded by Eli Lilly and Company

Scan or click the QR code or use this URL (https://lillyscience.lilly.com/congress/isporeu2021) for a list of all Lilly content presented at the congress.

International Society for Pharmacoeconomics and Outcomes Research - European Congress (ISPOR EU); Virtual; (30 November – 3 December 2021)

Sponsored by Eli Lilly and Company