ABSTRACT

Title	A Drug Utilization Study of SEASONIQUE in Europe
Keywords	levonorgestrel, ethinyl estradiol, drug utilization pattern, extended oral contraceptive
Rationale and background	SEASONIQUE is a novel extended combined oral contraceptive (COC) containing fixed-dose combination of 0.15 mg levonorgestrel (LNG)/0.03 mg ethinyl estradiol (EE) for 84 days, followed by 0.01 mg EE for seven days. The product may improve the compliance along with reduction in the risk of unwanted pregnancies by providing continuity and decreasing the scheduled withdrawal bleedings. Market authorisation for SEASONIQUE was granted in various European countries in 2015. The European Medicines Agency (EMA) has requested a drug utilization study (DUS) to describe the utilization patterns of SEASONIQUE in Europe during routine clinical practice.
Research question and objectives	The primary objective was to characterize drug utilization patterns of SEASONIQUE in France, Italy and Belgium. The drug utilization pattern of SEASONIQUE described patients' characteristics/demographics, and indication by physician panel in the outpatient settings (i.e., primary care and specialists [gynaecologists] {only for France}) for each of the targeted countries.
Study design	A retrospective cohort study using secondary databases (electronic medical records database [EMR])
Setting	The study captured data from female patients in outpatient settings. A national representative sample of general practitioners (GPs) were included for each country. In addition, for France only, a panel of specialists (gynaecologists) were included. Study period – France: October 2015- September 2018, Italy: June 2015-May 2018, Belgium: December 2015- November 2018
Subjects and study size, including dropouts	The sample size for the study was dependent on the data availability in the longitudinal EMR. The study included patients who received at least one prescription for SEASONIQUE during three-year study period from the three different databases as follows: 269 patients in the French GP

	panel, 232 patients in the Italian GP panel, 224 patients in the Belgian GP panel and 659 patients in the French gynaecologist panel.
Variables and data sources	Data on demographics, patient and treatment characteristics of SEASONIQUE use, and medical history were extracted for each patient. Comorbidities and concomitant medications information were also included. The following characteristics were examined: 1. Duration of use (uninterrupted use) 2. Indication of use (diagnosis related to the SEASONIQUE prescription) 3. Use of prior combined hormonal contraception (CHC) before SEASONIQUE initiation 4. Switch patterns of patients using SEASONIQUE and changes to a different COC and concomitant use of other COC or other forms of contraception Exposure was defined as one or more recorded written prescription for SEASONIQUE during the study period for each country. Data was obtained from European Union (EU) automated healthcare databases, Longitudinal EMR (IQVIA [formerly IMS] Longitudinal Patient Database [LPD]®), from three selected countries in which the product was marketed (France, Italy and Belgium).
Results	Across all countries and panels, majority of patients were ≤ 35 years old and, based on the SEASONIQUE exposure status, patients were either naïve or new users. Patients included in the study had no prior history of deep venous thrombosis (DVT)/pulmonary embolism (PE), breast cancers and other gynaecological cancers at baseline. The primary indication associated with a prescription of SEASONIQUE was contraception (70.6% of patients in the French GP panel, 41.8% of patients in the Italian GP panel, 81.2% of patients in the Belgian GP panel and 61.3% in the French gynaecologist panel). Additionally, menstrual migraine was reported as an indication in almost 15% of patients in the French GP panels. The study reported that up to 22.7% of total patients were using hormonal/non-hormonal contraceptives prior to the index date. Majority of patients that switched presented a switch in contraception from CHC to SEASONIQUE at index date.
Discussion	The study incorporated real-world data sources from various European countries to explore the demographics of SEASONIQUE users informing

	on the drug utilization patterns of this extended contraceptive regimen. The study reveals that SEASONIQUE was prescribed predominantly for contraceptive purposes, followed by an indication on prevention of menstrual migraine. The results of the study showed that prescribing indications for SEASONIQUE were comparable across all the participating countries.