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Price differentials of oral triptans in eight European Union countries

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Abstract Triptans are presently a milestone in the treatment of migraine patients. Because of their effectiveness and safety, they have radically improved migraine treatment but their use has meant a substantial increase in spending for medicines. We thus compared retail prices of triptans in eight European Union member states to establish the existence and the amount of price differentials. We found wide price differentials between countries (from 83% to 140%) and within countries, where they attained 191% in Belgium. The least and most expensive products differed from country to country. These differentials mean

that the most cost-effective triptans differ from country to country and this can be an important source of variation in the treatment of migraineurs. A better-harmonised European system of pricing could limit these unethical variations.

Key Words Migraine • Triptans • Prices • European Union

Introduction

Since their introduction in early 1990s, selective 5-HT_{1B/1D} agonists (triptans) have radically improved migraine management because of their effectiveness, tolerability and safety. Their use, despite the high cost, has largely increased in the last years. Five different compounds (sumatriptan, naratriptan, zolmitriptan, rizatriptan and almotriptan) are listed in the 2002 WHO-ATC list [1] and thus are clinically available in at least one market. Eletriptan and frovatriptan are two newer triptans, and a total of seven different compounds will be soon available for treatment of migraine patients.

Because of the large number of clinically available triptans, physicians need comparative *clinical* information to

select those products with the highest likelihood of clinical success as well as comparative *cost* information to prefer, when possible, those products with the best cost-efficacy ratio. Even if several studies have demonstrated the cost-effectiveness of triptans, their use leads to substantial costs and there is a need, in a capped budget era, to limit expenditures without affecting quality of care.

Despite several reports comparing clinical efficacy of triptans and a meta-analysis comparing 53 clinical trials [2], no comparative data at the European level about triptan prices have been published and there is a gap of information at this level. Moreover, large price discrepancies between the European countries have been described for a variety of medicines. For all these reasons we thought it was of interest to compare costs of triptans and to study their price differentials.

Materials and methods

Data were obtained from the EURO-Medicines database, a European Union-funded project aimed to collect information about medicines available in European countries and whose data are now available on the Internet (www.euromedicines.org). Details of the methodology and data sources used for collecting and analysing these data were provided elsewhere [3].

Our comparison refers to prices in 2000 and is limited to solid oral triptan formulations, which are licensed in all the EU countries and are more commonly used. Thus, suppositories and parenteral forms (injection and spray) were excluded from the comparison. Prices were compared using the cost per single unit (tablet, capsule, wafer), calculated by dividing the retail (pharmacy) price of the pack by the number of single units. Retail price includes ex-factory (industry) price, wholesale margin, pharmacist margin and value added tax (VAT); the extent of these different components differs from country to country.

Retail prices were calculated in local currency and converted in euro using the fixed conversion rate for 5 countries within the European monetary area (Belgium, France, Germany, Italy and Netherlands), or the September 2000 exchange rate for the 3 additional EU countries (1 euro equals 7.43 Danish crowns, 8.48 Swedish crowns and 0.63 British pounds). Incremental costs within countries were calculated assuming the cheapest price in each country as a reference.

Results

The lowest and highest prices, the countries with the lowest and highest prices and the percentage differences between countries are reported in Table 1. The percentage differences between countries range, for a same compound, from 83% for rizatriptan (5 mg and 10 mg) to 140% for zolmitriptan (2.5 mg).

The triptans with the lowest price per unit by country are: naratriptan 2.5 mg in Belgium (€ 5.00) and UK (€ 6.35); zolmitriptan 2.5 mg in France (€ 4.69), Sweden (€ 5.88), UK (€ 6.35), Italy (€ 6.89) and Denmark (€ 7.52); and sumatriptan 50 mg in The Netherlands (€ 4.62), Sweden (€ 5.59, parallel import), and Germany (€ 7.95).

The incremental costs per single unit of the triptans and of their different strengths are reported in Table 2. Naratriptan 2.5 mg is the least expensive triptan in Belgium and in the UK (together with zolmitriptan 2.5 mg in the UK). There are some important differences between these two countries: (1) the price per tablet of naratriptan in the UK (€ 6.35) is independent of pack size, while there is a 73% difference in Belgium according to the number of tablets in the pack; (2) the price of a zolmitriptan 2.5-mg unit is the same as that of a naratriptan 2.5-mg unit in the UK, while it is higher by

Table 1 Prices of solid oral triptan formulations in European countries

	Price range, euro ^a	Country with the lowest price	Country with the highest price	Difference, %
Sumatriptan 50 mg	4.62–9.59	Netherlands	Denmark	107
Sumatriptan 100 mg	9.07–16.80	Netherlands	Denmark	85
Naratriptan 2.5 mg	5.00–11.32	Belgium	Germany	127
Zolmitriptan 2.5 mg	4.69–11.24	France	Germany	140
Rizatriptan 5 mg	6.21–11.36	Netherlands	Germany	83
Rizatriptan 10 mg	6.21–11.36	Netherlands	Germany	83

^a Price per single unit (tablet, capsule or wafer)

Table 2 Incremental costs of triptan formulations within EU countries. Prices in each country were normalized to that of the least expensive formulation, set at "100". Values are normalized prices or price ranges when there were differences due to package size

	Belgium	Denmark	France	Germany	Italy	Netherlands	UK	Sweden	Sweden (parallel import)
Sumatriptan 50 mg	NA	110–128	108–118	100–102	101	100–105	118–124	106–132	96–103
Sumatriptan 100 mg	223–291	214–223	NA	179–204	195	196–209	200	196–231	176–190
Naratriptan 2.5 mg	100–173	102–108	114–124	116–142	NA	141–145	100	111–136	NA
Zolmitriptan 2.5 mg	112–186	100–126	100–124	116–141	100–101	117–120	100	100–119	NA
Zolmitriptan 5 mg	NA	NA	NA	NA	NA	NA	NA	114–121	NA
Rizatriptan 5 mg	197	129–139	NA	133–143	101	134	111	106–139	NA
Rizatriptan 10 mg	186–197	120–139	NA	133–143	137	134	111	114–139	NA

NA, not available

12%–86% in Belgium; (3) the price of rizatriptan 5 mg, compared with naratriptan 2.5 mg, is 11% higher in the UK and 97% higher in Belgium.

Zolmitriptan 2.5 mg is the least expensive triptan in Denmark, France, Italy, UK and Sweden (Table 2). There are no major differences in the cost of a single zolmitriptan 2.5-mg unit between different pack sizes in the UK and Italy, while these prices vary by 19%, 24% and 26% in Sweden, France and Denmark, respectively. The cost of a sumatriptan 50-mg tablet, as compared with zolmitriptan 2.5 mg, is similar in Italy (1%) but differs by 18%–24% in the UK. The cost of a rizatriptan 5- or 10-mg unit is higher than that of zolmitriptan 2.5 mg by 11% in the UK, 1%–37% in Italy and 29%–39% in Denmark.

Discussion

From our data it appears that wide differentials in prices of triptans exist at a European Union level: the differences

between countries for one compound range from 83% to 140% and they are not all in the same direction: the least expensive product in one country can be the most expensive in another country.

Moreover the extent of variations, excluding sumatriptan 100 mg, varies within countries from 24% in UK and France to 97% in Belgium. Including sumatriptan 100 mg the extent of variation becomes much wider, attaining 100% and 191% in the UK and Belgium, respectively.

Selection of the right triptan for an individual patient is a complex choice: it must take in consideration at least the clinical characteristics of the single patient (frequency and severity of migraine attacks, risk factors, contraindications to treatment), the efficacy of each triptan (pain-free response at 2 h, sustained pain-free rates, and recurrence rates), and the costs of treatment.

The wide price differentials mean that the most cost-effective triptan can differ in Europe from country to country and this is a source of variation in the treatment of migraineurs. A better-harmonised European system of pricing could limit these unethical variations.

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