

## PHARMACOLOGICAL STUDY

# 5 most consumed opioid analgesics in Slovakia in the year 2006 – comparison to five other countries (Finland, Norway, Denmark, Spain, Australia)

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**Abstract:** *Introduction:* Opioid analgesics are drugs of choice in the treatment of moderate and severe malignant or noncancer pain. Consumption data helps us to evaluate the status of country's public health.

*Methods:* We analysed the consumption of opioid analgesics from ATC class N02A in Slovakia in the year 2006 and compared it with five other countries – Finland, Norway, Denmark, Spain and Australia. We then calculated drugs that accounted for 90 % of the total volume of DDDs in the year 2006.

*Results:* Slovakia showed a dominance of tramadol consumption that constituted three quarters of the total group consumption. Tramadol is the commonest consumed opioid analgesic in all observed countries (in Norway it constituted only 35 % of total group consumption, whereas in Slovakia it was 72 %).

*Discussion:* Opioid consumption in Slovakia is increasing, but comparison with the Nordic countries, Spain and Australia showed a significantly lower consumption. Exception is tramadol with the highest consumption in Slovakia.

*Conclusion:* Observed trends in consumption indicate a well known accent of the Nordic countries on treatment of pain. Opioid consumption in Slovakia continues to stay low (Tab. 1, Fig. 1, Ref. 10). Full Text (Free, PDF) [www.bmj.sk](http://www.bmj.sk).

Key words: opioid analgesics, drugs of choice, treatment, moderate and severe malignant pain, noncancer pain.

Opioid analgesics are drugs of choice in the treatment of moderate and severe malignant or noncancer pain. Consumption data help to evaluate the level of country's public health.

Barriers in prescription of opioid analgesics (opiophobia) are especially due to fear of causing addiction, fear of possible adverse drug reactions and nevertheless lack of knowledge about adequate therapy. These myths must be avoided in order to gain successful pain relief (1).

“Gold” standard in therapy is morphine whose consumption of which is an important indicator of the progress in pain relief. But nowadays we use more other newer opioid analgesics with better application or pharmacokinetic profile. For example fentanyl, oxycodone etc (2).

The aim of this paper was to compare Slovak prescription habits in comparison of five other countries and to shed light on this problem. There are some limitations of the study. Our analysis was based on wholesale data and we had no access to specific

patient oriented data (age, concomitant diseases and medications), therefore risk factor stratification was not possible.

## Methods

We analysed the total consumption of opioid analgesics from ATC class N02A in Slovakia in the year 2006. Data were obtained from State Institute for Drug Control in SR. The analysis was based on the Defined Daily Doses (DDD) methodol-

**Tab. 1. Drugs that accounted for 90 % of the total volume of DDDs in the year 2006.**

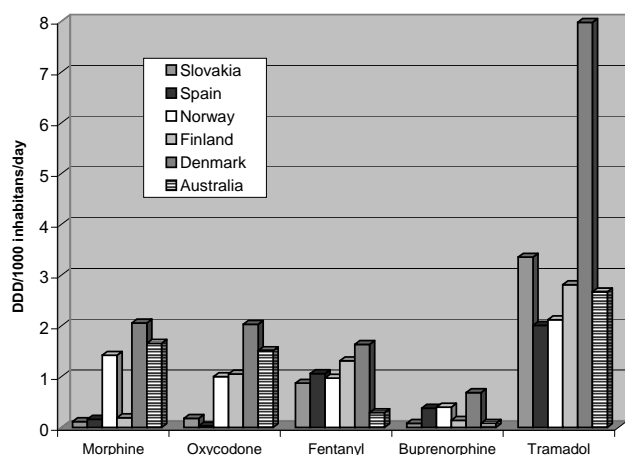
Slovakia	%	Spain	%	Australia	%
Tramadol	72.2	Tramadol	54.5	Tramadol	42.2
Fentanyl	18.8	Fentanyl	28.7	Morphine	26.2
	91.0	Buprenorphine	10.3	Oxycodone	23.9
			93.5		92.3
Finland	%	Norway	%	Denmark	%
Tramadol	51.1	Tramadol	35.5	Tramadol	55.0
Fentanyl	23.8	Morphine	23.8	Morphine	14.2
Oxycodone	19.1	Oxycodone	16.8	Oxycodone	14.0
	94.0	Fentanyl	16.2	Fentanyl	11.3
			92.3		94.5

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**Fig. 1. Comparison of five opioid analgesics in Slovakia, Spain, Norway, Finland, Denmark and Australia (expressed as defined daily doses/1000 inhabitants/day) in the year 2006.**

ogy according to ATC classification. We compared year 2006 with five other countries (Finland, Norway, Denmark, Spain, Australia).

We have chosen Finland, Denmark and Norway as representatives of Nordic countries with high standard of pain therapy and pharmacovigilance. Spain represents a mediterranean country with different pain perception and treatment policy and Australia is long time among countries with high consumption.

We then calculated drugs that accounted for 90 % of the total volume of DDDs – drug utilisation 90 % (DU 90 %) – in the year 2006. We used a methodology described by Bergman et al (3).

## Results

We observed in Slovakia a dominance of tramadol consumption which constituted three quarters of the total group consumption associated with constant increase of usage (Fig. 1). Consumption of morphine during the studied period was relatively stable, all other most consumed opioids increased their usage.

The DU 90 % methodology allows comparisons over time and between different countries and may identify problem areas where educational intervention is needed. Drugs that accounted for 90 % of the total volume of DDDs in the year 2006 in observed countries are shown in Table 1.

Tramadol belongs to the most consumed opioid analgesic in all observed countries, but we can see strong differences in its proportional representation (in Norway constituted only 35 % of the total group consumption, whereas in Slovakia 72 %). Fentanyl consumption was lowest in Denmark.

Buprenorphine was among drugs accounting for 90 % segment of the total volume of DDDs only in Spain (about ten percents), morphine in Denmark (14 %), Norway (fast 24 %) and Australia (26 %). Oxycodone is markedly more consumed in representatives of the Nordic countries (Finland, Denmark and Norway) and belongs to DU 90 % drugs especially in Australia.

## Discussion

Opioid consumption in Slovakia is increasing, but comparison with the Nordic countries as also with Australia and Spain showed significantly lower consumption. Our previous study showed similar results (9).

Dominance of tramadol in Slovak opioid consumption is marked (more than 70 % of the total group consumption). It could be related to various application forms as also to an absence of typical adverse drug reactions related to opioids, or favorable prize. The highest consumption was in Denmark as also the consumption of other observed opioids.

Second most used opioid is fentanyl. It could be related to availability of “comfort” transdermal application form. Its establishment was probably a reason of relatively broad use in cancer pain treatment.

Morphine consumption is an important indicator of the quality of analgesic therapy. The second biggest consumption was observed in Australia. Buprenorphine is available in transdermal form too and maybe therefore its consumption is increasing – second highest was in Norway.

Drug consumption is influenced also by the availability of particular drug on the market – for example oxycodone is available in Slovakia from the year 2002. The DU 90 % is an inexpensive, flexible, and simple method for assessing the quality of drug prescribing in routine health care.

Some cultural and demographic factors can contribute for to differences in pain therapy (10). We can allow factor of religiosity too, because countries with high religiosity such as Spain, Italy and Poland are among countries with lower consumption.

Observed trends in consumption indicate a well known accent of the Nordic countries on treatment of pain. We have to continue in increasing usage of opioid analgesics after deleting proofless opiophobia. Opioid consumption in Slovakia remains low in spite of the fact, that we cannot say there is we have less pain. Rather than this we probably treat pain insufficiently.

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