HUMAN EXPOSURES TO OPIOID ANALGESICS REPORTED TO THE POISONS INFORMATION CENTRE ERFURT FROM 2005 TO 2014

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Objective

In Germany, the number of prescriptions dispensed of opioid analgesics (OA) increased from the beginning of 2004 to the end of 2013 by 45% and fell slightly in 2014 [1]. Therefore, we asked whether a similar development could be observed in cases of OA exposures registered by the Poisons Information Centre (PIC) Erfurt.

Methods

The changes in frequencies, circumstances of exposure, symptoms, symptom severity, age groups, and substances involved in all OA related enquiries to the PIC Erfurt were analysed retrospectively from the beginning of 2005 to the end of 2014 and compared to non-OA (NOA) exposures.

Results

In total, 1,909 cases of OA exposures and 9,526 cases of NOA exposures were registered. In 925 cases, only one OA and in 5,225 cases only one NOA was involved, respectively. Although OA and NOA exposures increased almost by 50% and 32.8% from 166 and 832 in 2005 to 247 and 1,105 in 2014 their percentage of all cases of exposure remained almost constant at 1.3% (1.1-1.5%) and 6.7% (6.5-7.1%), respectively (**Fig. 1**).

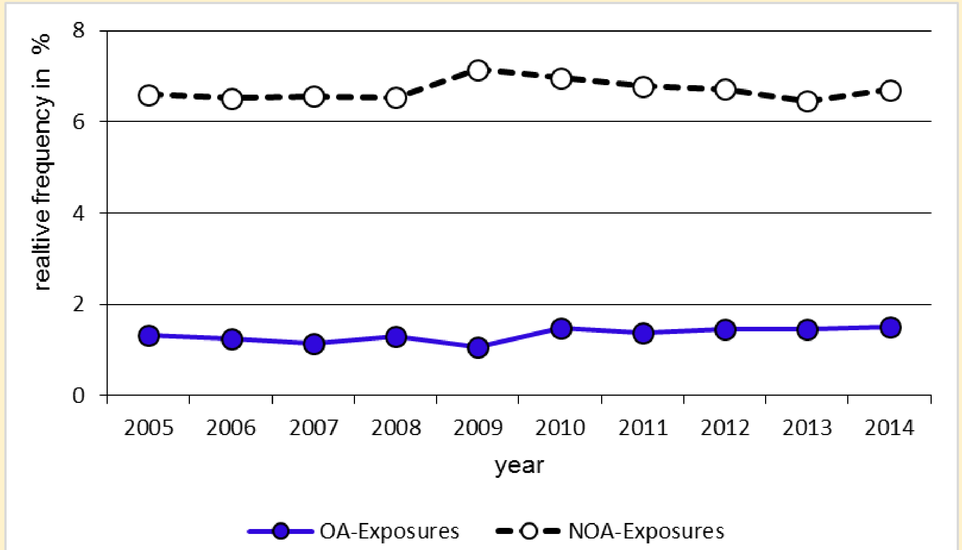

Fig. 1 Relative frequencies of OA- and NOA-exposures in relation to all human exposures registered by the PIC Erfurt from the beginning of 2005 to the end of 2014.

The most frequent OA exposures were cases with tramadol (718) and tilidine (395). While tramadol exposures showed no trend (median: 73.5 cases the day; range: 57 to 86 cases the day). Cases of tilidine exposures doubled from 29 in 2005 to 60 in 2014 (**Fig. 2**).

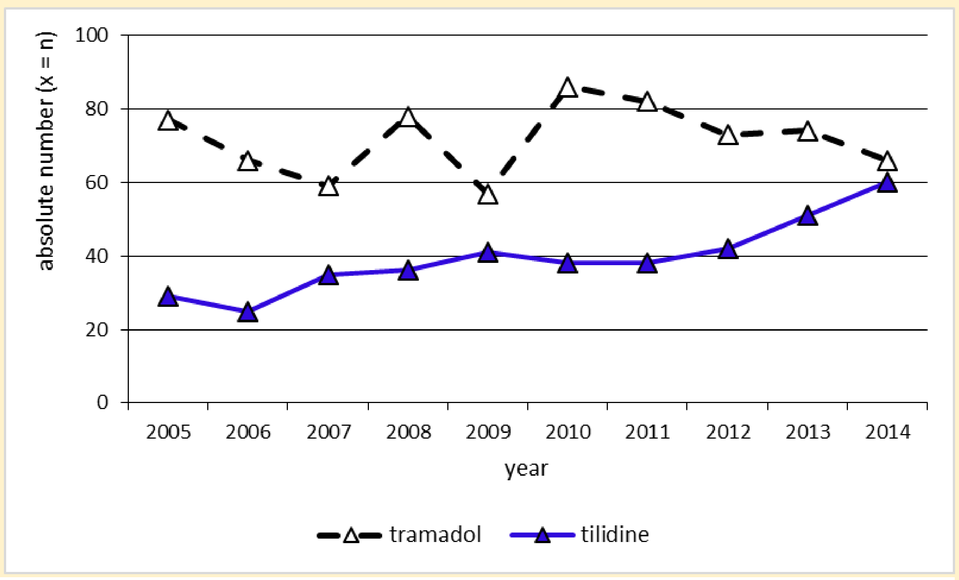

Fig. 2 Absolute numbers of tramadol and tilidine exposures registered by the PIC Erfurt from the beginning of 2005 to the end of 2014.

Age groups in OA exposures were more often adults (90.4%) and less frequently children (9.5% (toddlers 4.1%)) compared to NOA exposures (adults 67.6%; children: 32.3% (toddlers 15.2%)) The proportion of exposures in intentional abuse was higher in OA (5.7%) than in NOA exposures (0.4%), whereas the proportion of accidental and suicidal exposures was lower (14.6% and 52.6% versus 20.9% and 58.5%). (**Fig. 3**)

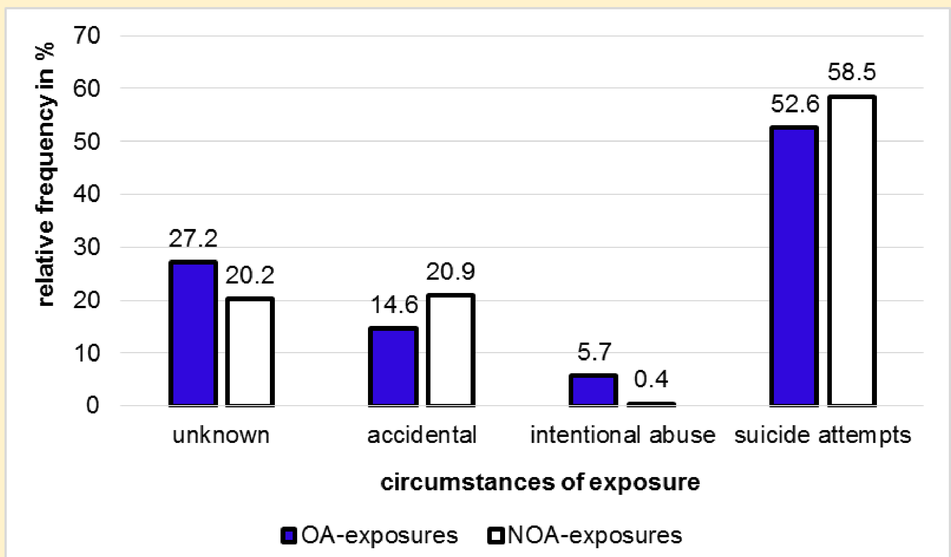

Fig. 3 Relative frequencies of circumstances of OA- and NOA-exposures registerd by the PIC Erfurt from the beginning of 2005 to the end of 2014.

OA exposures were more often symptomatic than NOA cases (mild: 48.4% versus 27.3%; moderate: 13.4% versus 4.3%; severe: 6.8% versus 1.2%). Of 27 cases with seizures, 24 were caused by tramadol. (**Fig. 4**).

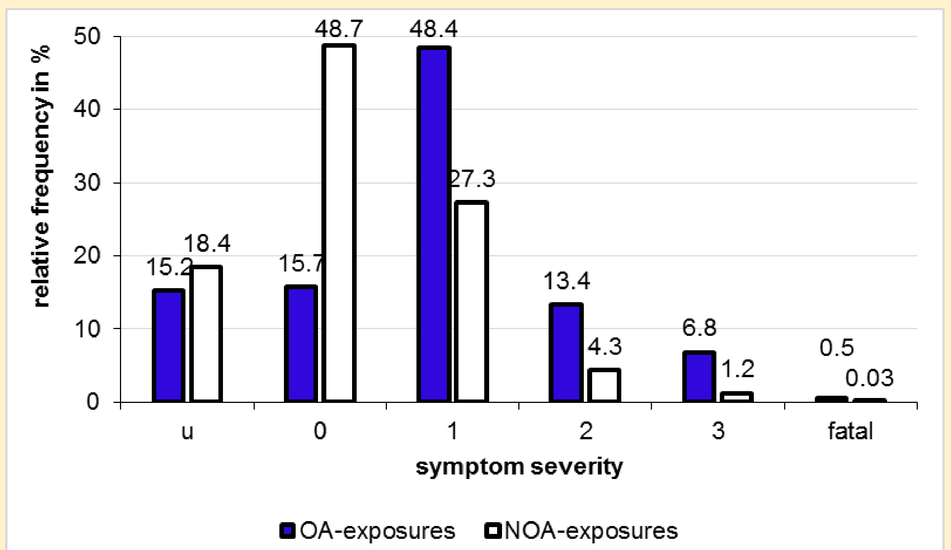

Fig. 4 Relative frequencies of symptom severity of OA- and NOA-exposures registerd by the PIC Erfurt from the beginning of 2005 to the end of 2014.

Conclusion

- OA exposures correlated only partially with their number of prescriptions dispensed.
- Tramadol and tilidine were involved most often. While the absolute numbers of tramadol exposures remained almost constant, the cases with tilidine increased twofold.
- Compared to NOA exposures, OA exposures resulted more often in moderate and severe symptoms. The high potential of tramadol to cause seizures has already been described in literature [2].

References

1. Böger RH, Schmidt G. Analgetika. In: Schwabe U, Paffrath D, eds. Arzneiverordnungsreport 2014. Springer-Verlag Berlin-Heidelberg, Germany, 2014: 301-19.

2. Ryan NM, Isbister GK. Tramadol overdose causes seizures and respiratory depression but serotonin toxicity appears unlikely. Clin Toxicol 2015; 545-50.