

High pre-injury dispensing of psychoactive prescription drugs in a 10 years trauma population compared to the general population. A retrospective registry analysis.

Henrik Andreas Torp^{1,2}, **Svetlana Skurtveit**^{2,3}, **Nils Oddvar Skaga**^{4,6}, **Ingebjørg Gustavsen**¹, **Jon Michael Gran**⁵, **Leiv Arne Rosseland**^{2,6}

¹ Department of Pharmacology, Division of Laboratory Medicine, Oslo University Hospital

² Institute of Clinical Medicine, University of Oslo

³ Norwegian Institute of Public Health

⁴ Department of Anesthesiology, Division of Emergencies and Critical Care, Oslo University Hospital

⁵ Department of Biostatistics, Institute of Basal Medical Sciences, University of Oslo

⁶ Department of Research and Development, Division of Emergencies and Critical Care, Oslo University Hospital

Background and Goal of Study: The use of psychoactive prescription drugs is associated with increased risk of traumatic injury. Previous studies have focused on specific drugs or subgroups of patients. Our aim was to examine the extent of psychoactive drug dispensing prior to injury in a comprehensive population of trauma patients.

Materials and Methods: The Oslo University Hospital Trauma Registry provided data on all trauma patients admitted to the trauma center between 2005 and 2014. We linked the data to Norwegian Prescription Database data from 2004. Dispensed opioids, benzodiazepines, z-hypnotics, gabapentinoids, and centrally acting sympathomimetics in the year before trauma of each patient were analyzed. We determined the annual prevalence and mean annual cumulative defined daily doses (DDD) for each drug class, and compared results with corresponding figures in the general population, using standardized ratios.

Results and Discussion: 12,713 patients (71% male) were included. Median age was 36 years (range 0-103). 4,891 patients (38%) presented with severe trauma (Injury Severity Score > 15). The ratio between observed and expected annual prevalence of dispensed prescriptions, adjusted for age and gender, was 1.50 (95% CI 1.43-1.57) for opioids, 2.06 (95% CI 1.95-2.16) for benzodiazepines, 1.68 (95% CI 1.58-1.76) for z-hypnotics, 1.91 (95% CI 1.61-2.22) for gabapentinoids, and 1.92 (95% CI 1.62-2.21) for centrally acting sympathomimetics. Compared to the general population, mean annual cumulative DDD of opioids and benzodiazepines dispensed to trauma patients were more than twice and three times as high, respectively, in several age groups below 70 years. Our results support previous findings that the prevalence of psychoactive drug dispensing is high among trauma patients.

Conclusions: In terms of both frequency and amounts, the pre-injury dispensing of psychoactive drugs to trauma patients supersedes that of the general population, especially in younger patients.