Multidose Drug Dispensing And Longitudinal Changes In Psychotropic Prescribing Patterns Among Older Adults: National Matched Cohort Study

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Background: An increasing number of frail and multimorbid older adults are dispensed drugs in machine-packed disposable pouches that contain all the drugs that intended for a given dose occasion ('multidose'). It has been suggested that multidose may promote psychotropic overuse.

Objectives: We aimed to compare the use of psychotropic drugs before and after the transition to multidose drug dispensing among older adults in Sweden.

Methods: Matched cohort study using individual-level drug dispensing data with national coverage in Sweden.Older adults (≥65 years) who initiated multidose dispensing between 1 January and 31 December 2013, matched 1:2 on sex, age and index date with older adults who remained on manually dispensed medications. Initiation of multidose dispensing was assessed using a 5-year washout period. Study participants were followed from 24 months before until 24 months after the date, with censoring at time of death or emigration. Main outcome was psychotropic polypharmacy (≥3 drugs acting on the CNS).

Results: A total of 31,612 cases and 63,224 controls were included. Mean age at index date was 83.9 (7.4) years. The prevalence of psychotropic polypharmacy increased
substantially among multidose initiators, from 15.1% two years before the transition, to 37.5% the month after, up to 43.7% two years after. This psychotropic polypharmacy was fueled by a dramatic increase in the incident use of long-acting benzodiazepines (e.g. clonazepam), Z-drugs (e.g. zopiclone), strong opioids, antipsychotics, antidepressants, and - to a lesser extent - antidementia drugs. For instance, the incidence rate of benzodiazepine initiation increased from 0.70 per person-month 12 months before multidose initiation to 4.78 per 1000 during the first month after. No change was observed among controls.

Conclusions: Older adults who switch to multidose drug dispensing are at high risk of adverse drug-related events due to a sustained increase in exposure to substantial psychotropic polypharmacy.