

Estimating treatment episodes based on DDD

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Aim

- To assess to what extent the indicator “concurrent use of three or more psychotropic drugs” captures use of potentially inappropriate psychotropic drugs among elderly

Swedish Prescribed Drug Register

Eur J Clin Pharmacol (2009) 65:635-642

→ Estimate treatment episodes

→ Estimate concurrent use



Estimate drug use

- A. Solely based on drug purchases during a specified time period
 - In some cases rather crude
- B. Estimate treatment episodes based on e.g. 1 DDD/day for all substances
 - Reliable?
- C. Estimate treatment episodes based on average prescribed daily dose (PDD) for each substance

Dosage instructions

- Dosage instructions in the Swedish Prescribed Drug Register
 - Available as free text only
 - Missing for all multi-dose prescriptions (ApoDos)



Estimation of PDD

- Review of dosage instructions for a random sample of dispensed prescriptions
- For each substance, values from additional dosage instructions were added until the estimated PDD was stable
 - Median reviewed instructions per substance: 160 (range 27-295)
- Corresponding manual review for multi-dose prescriptions (ApoDos) at Dosapoteket

Exceptions

- 0.5 DDD/day was assumed for some drugs
 - midazolam; "according to given instruction"
 - 18 substances; <100 users/substance
- Substances without DDDs were excluded from the study
 - 8 substances, <300 users/substance

Results from PDD-review

- Mean PDD for all psychotropics
 - 0.5 DDD (range 0.1-1.2)
- Mean PDD per group
 - Antipsychotics 0.3 DDD
 - Anxiolytics 0.4 DDD
 - Hypnotics 0.6 DDD
 - Antidepressants 0.8 DDD

Strengths and limitations

- Considers differences in PDDs between different substances
- Uses available information to a higher extent than eg the three-month method
- Time consuming review of PDDs for each substance
- Produces a substance average PDD → does not consider differences in PDD by age, sex, indication etc
- Not feasible for substances without a DDD
- Problems with precision for drugs used as needed

Comparison of methods

- Population: All individuals aged 75 years and older who purchased a psychotropic drug in a Swedish pharmacy during 2006

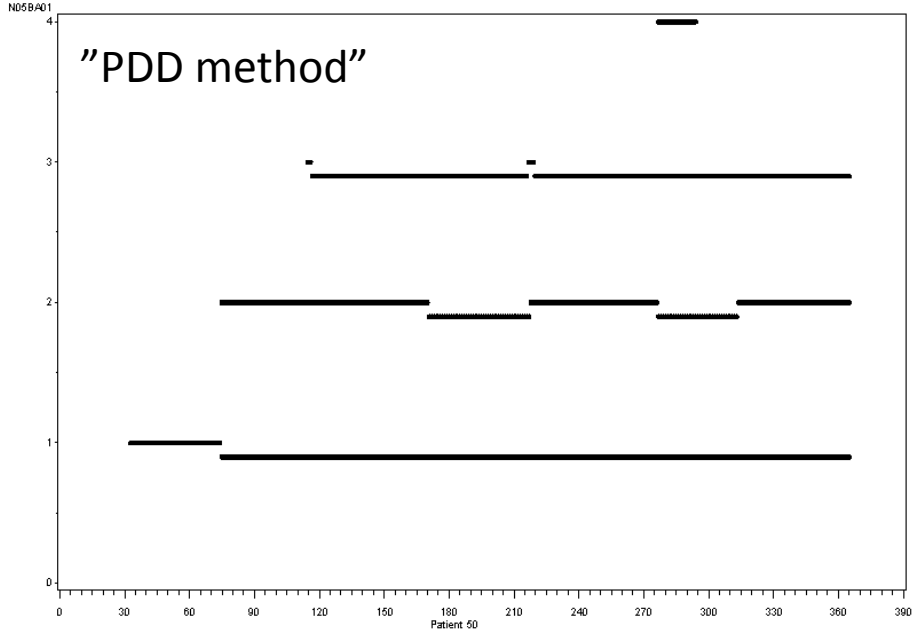
Method	Prevalence
At least 40 days of concurrent use of three or more psychotropics	
1 DDD/day	9%
0.5 DDD/day	13%
PDD method	15%
Purchase of at least three psychotropics during:	
1 month	7%
3 months	11%
6 months	16%
12 months	22%

Some illustrative examples



The patient has more than one treatment episode of the same drug

Patient 50

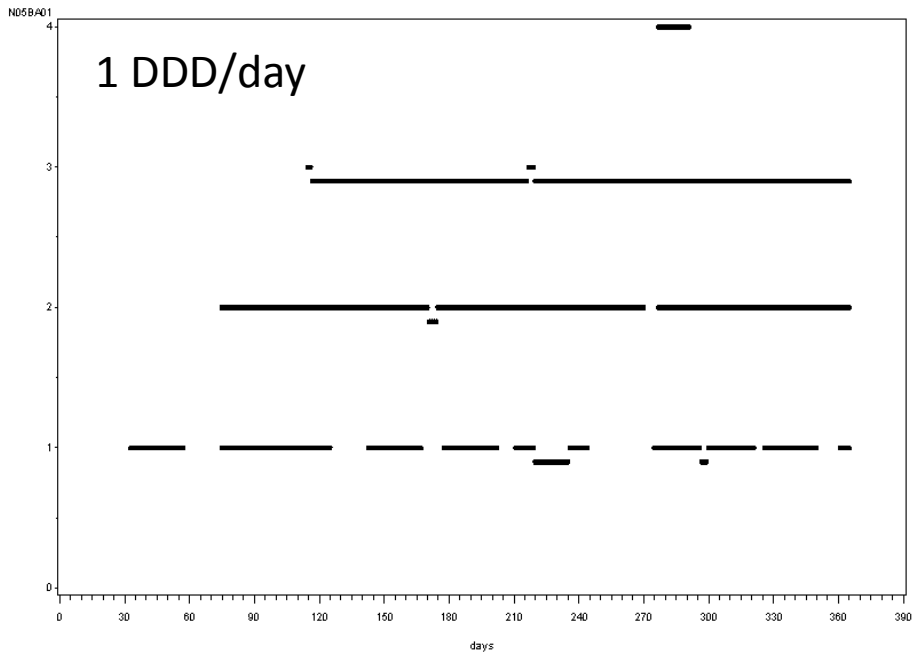


Mirtazapin (0.8 DDD/day)

Propiomazin (1.0 DDD/day)

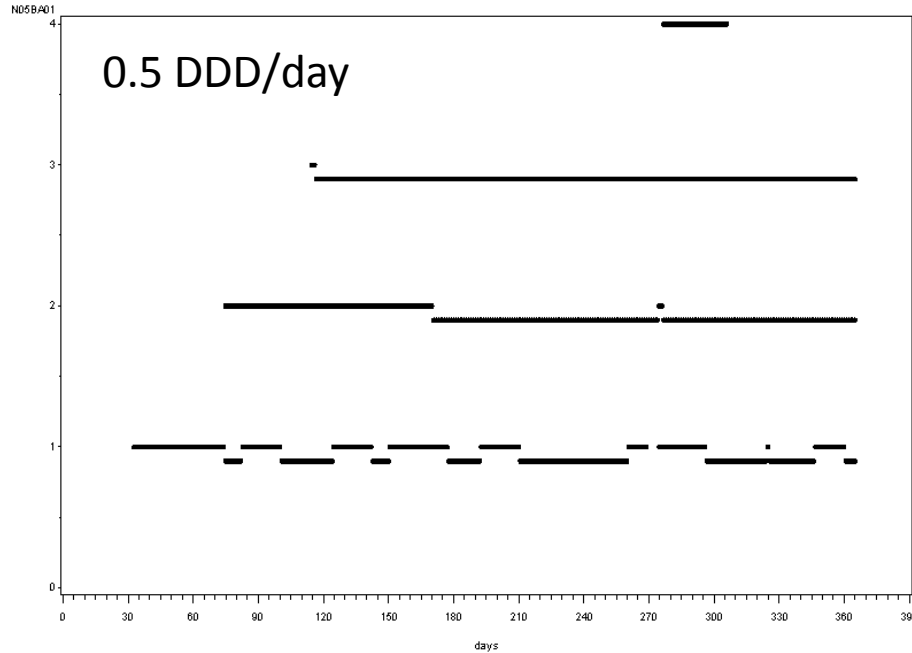
Flunitrazepam (0.7 DDD/day)

Diazepam (0.3 DDD/day)



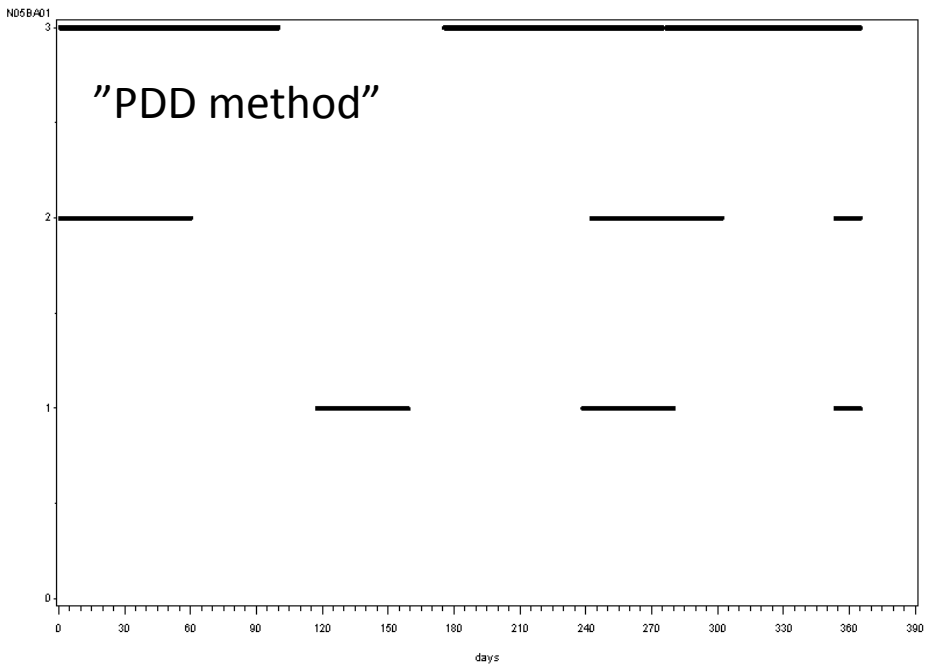
1 DDD/day

Patient 50



0.5 DDD/day

Patient 209

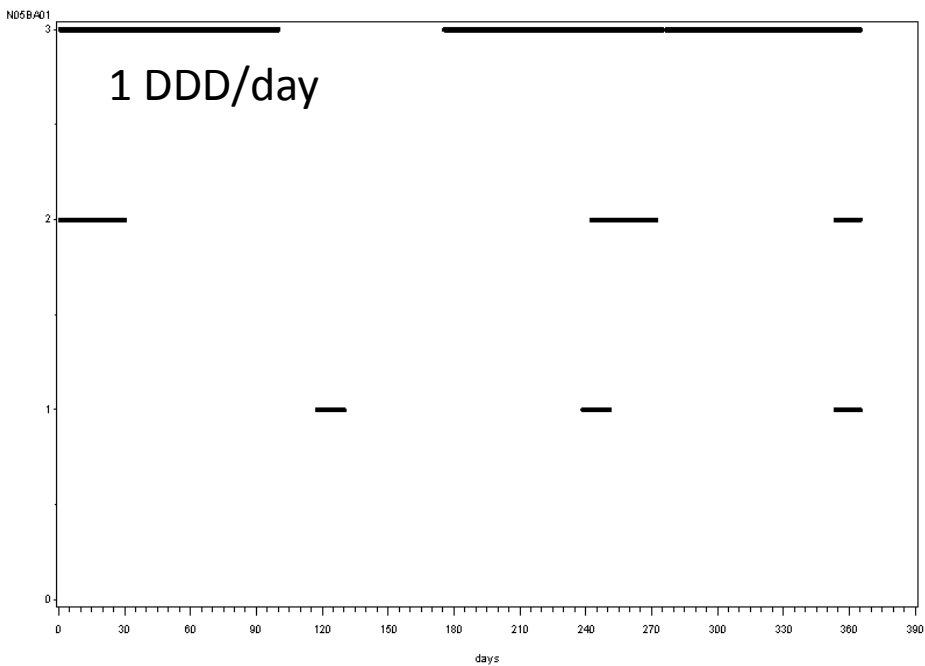


Sertraline (1.0 DDD/day)

Zolpidem (0.5 DDD/day)

Diazepam (0.3 DDD/day)

Patient 209



N05BA01

0.5 DDD/day

3

2

1

0

0

30

60

90

120

150

180

210

240

270

300

330

360

390

days

Thanks for your attention!

Questions?

Thanks to Tatiana Sandström (NHV) for codes to produce the graph

