Association of antipsychotic polypharmacy with health service cost – a Danish register-based cost-minimisation analysis

Lone Baandrup, MD, PhD; Jan Sørensen, MSc; Henrik Lublin, MD, DMSc; Merete Nordentoft, MD, PhD, DMSc; and Birte Glenthoj, MD, DMSc

1Center for Neuropsychiatric Schizophrenia Research, Copenhagen University Hospital, Psychiatric Centre Glostrup, Glostrup, Denmark; 2Centre for Applied Health Services Research and Technology Assessment, University of Southern Denmark, Odense, Denmark; 3Copenhagen University Hospital, Psychiatric Centre Bispebjerg, Copenhagen NV, Denmark

Objective: Antipsychotic polypharmacy is increasingly used in the treatment of schizophrenia, despite the lack of evidence of superior efficacy compared with antipsychotic monotherapy. The objective of this study was to investigate the association of antipsychotic polypharmacy in schizophrenia with costs of primary and secondary health service use.

Method: Cost-minimisation analysis. Resource utilisation and costs were operationalised using central Danish registers to measure consumption of health services for a two year period. We included patients treated at one of two Danish psychiatric referral centres. Their prescribed treatment with either antipsychotic polypharmacy or monotherapy at two cross-sectional dates were recorded and used as proxy of polypharmacy exposure during the preceding year. A multiple regression model was fitted with total costs of primary and secondary health service use as dependent variable and antipsychotic polypharmacy, diagnosis, age, gender, disease duration, and treatment site as covariates.

Results: The sample consisted of 736 outpatients with a diagnosis in the schizophrenia spectrum (ICD-10). Among these, 505 (67%) were duplicates (i.e. were attached as outpatients at both January 1, 2008 and January 1, 2009), 78 (11%) were only attached at January 1, 2008, and 153 (21%) were only attached at January 1, 2009. Demographic and clinical characteristics of the study population by polypharmacy exposure (antipsychotic polypharmacy vs. monotherapy) are shown in Table 1 for each of the two study years. Antipsychotic polypharmacy was associated with significantly higher total costs for health service use compared with monotherapy (p=0.02 for both years) in a multiple linear regression model with adjustment for various confounders (Table 2). A subgroup analysis with GAF (Global Assessment of Functioning) included as covariate suggested that GAF was a partial confounder for the association of antipsychotic polypharmacy with health service costs since the association was no longer statistically significant when GAF score was included in the regression model (data not shown). However, this could also be due to a lack of power because of the fewer patients included in this analysis.

Conclusion: Antipsychotic co-prescribing is significantly associated with increased health care costs in Danish schizophrenia outpatients, but due to the observational design of the study no causal relation can be inferred. Our study adds to the lists of arguments against the excessive use of antipsychotic polypharmacy, even though the results must be interpreted with caution due to possible bias by disease severity.

The study was supported by the National Board of Health in Denmark as part of a Health Technology Assessment.