

Prescribing of proton pump inhibitors in general practice

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Background

Several studies point out that proton pump inhibitors (PPIs) are both over and under prescribed. Overtreatment can occur among the more than half a million Danish citizens redeeming a prescription for PPI each year if the treatment is initiated and continued uncritically. Undertreatment is seen among the 2000 Danish inhabitants that each year suffer from peptic ulcer bleeding. Peptic ulcer bleeding is a serious disease associated with substantial morbidity and mortality. Peptic ulcer is often induced by the treatment with non-steroidal anti-inflammatory drugs or acetylsalicylic acid. Half of the medication-associated ulcers can be prevented if the patient is concomitantly treated with prophylactic PPI. Studies from other countries have demonstrated that not all patients in risk of peptic ulcer are treated with prophylactic PPI.

Aim

In the present study, we aim to analyse aspects of the treatment with PPIs in Danish general practice. In the study, we analyse Danish GPs' views on PPI treatment and considerations regarding PPI treatment for different groups of patients. Furthermore, we analyse Danish GPs' diagnostic considerations and behavioral patterns in relation to prescribing of PPIs. Finally, we analyse the extent of undertreatment with prophylactic PPI in patients with moderate to high risk of peptic ulcer, and we analyse the associations between undertreatment and patient characteristics. The entire project comprises three different substudies.

Method

Study 1, qualitative study: To investigate the Danish GPs' views on PPI treatment and considerations regarding PPI treatment for different groups of patients, a qualitative study comprising semi-structured interviews with Danish GPs is planned. Based on a literature review and discussions within the project group, an interview guide will be formulated. The questions will be adjusted to fit the context and the specific GP being interviewed. In the interview, subjects will be introduced in general expressions followed by more detailed questions to ensure that the following topics are covered: Management of patients with dyspepsia, pharmacologic versus non-pharmacologic treatment options and prescribing and re-prescribing of PPIs. The interviews are planned to take place in the GPs' offices and to take 30-60 minutes. Inclusion of GPs will continue until data saturation has been reached, and no more important new knowledge is gathered. The number of GPs needed is estimated at approximately 10-20 GPs. The GPs will be selected so that they represent a substantial variation in age, gender, practice location (rural versus urban) and organization in single-handed or partnership practice as these factors are expected to influence the GPs' attitudes and prescribing patterns. All interviews will be performed by Peter Fentz Haastrup, recorded digitally and transcribed word for word. The transcriptions will be analysed using the qualitative description approach. Each transcript will be thoroughly read and meaning units identified. Afterwards data will be sorted and categorized in topics and subtopics by identifying similar sentences, patterns and sequences. Quotations to illustrate each topic and subtopic will be chosen, and throughout the process, data will be related to the entire transcript in order to preserve the original context.

Study 2, audit study: To analyse Danish GPs' diagnostic considerations and behavioral patterns in relation to prescribing of PPIs, we plan to perform an audit based on a three week consecutive prospective registration of patients being prescribed PPIs in general practice. All Danish GPs (app. 3,600) will be invited to participate. Based on experiences from previous audits, we expect that 50% of the GPs will participate. For three weeks, the GP registers each patient when a prescription for PPI is being issued, and the GP fills in a registration table about the patient's symptoms and the GP's diagnostic considerations and actions in the management of each patient. For the registration, the audit method according to Audit Project Odense will be used. Based on a literature review, the abovementioned qualitative interview study and discussions within the project group, a registration table will be designed. The registration table will be pilot

tested for content, extent and understandability. The registration table comprises main topics regarding patient characteristics such as age and gender, symptom presentation, the GP's diagnostic management, the GP's considerations regarding diagnosis and cause of the symptoms and GP's therapeutic management of the patient. For each topic, the GP fills in one or more of the variables according to what fits the individual situation best. The registration table comprises detailed instructions in order to standardize the registration of patients. The results of the audit will be used for both scientific and quality improvement purposes as the participating GPs will be informed about the results and invited to take part in continuing education activities regarding evidence based management of dyspeptic patient and rational use of PPIs. The participating GPs will be invited to take part in a second similar registration after one year. Afterwards the effect of the audit will be analysed.

Study 3, register study: A nationwide cross sectional study based on data from national health registers will be performed to analyse the extent of undertreatment with prophylactic PPI in patients with moderate to high risk of peptic ulcer and to analyse the associations between undertreatment and patient characteristics. In national health registers, a cohort of patients with moderate to high risk of peptic ulcer will be sampled. The ulcer risk stratification is based on the American Gastroenterological Association's guideline for prevention of medication-associated peptic ulcer. The Danish National Prescription Register comprises all prescriptions redeemed nationwide and will be used to identify patients treated with ulcerogenic NSAID/ASA in 2013 and 2014. For these patients, all comedication will be extracted as well with focus on comedication that might decrease risk of peptic ulcer complication such as PPIs and histamine-2 receptor antagonists and drugs that might increase risk of peptic ulcer complications, such as selective serotonin reuptake inhibitors, systemic glucocorticoids and antiplatelets/anticoagulants. Drugs will be defined as comedication if the patient has redeemed a quantity of the drug which is large enough to cover the date of redeeming the NSAID/ASA. Through the unique civil registration number, accurate individual linkage can be made to the National Patient Register comprising information on all diagnoses and investigations performed in Danish hospitals. All diagnoses given to the cohort of ulcer risk patients will be extracted from the National Patient Register and in combination with comedication data used to measure multimorbidity. Furthermore, from Statistics Denmark, information about the patients' sociodemographic characteristics such as age, gender, educational level, affiliation to the labour market, income and cohabitation status will be obtained. The patients in risk of peptic ulcer will be categorized according to whether or not they receive prophylactic treatments with PPIs. Finally, associations between receiving prophylactic treatment and diagnoses, medication use, multimorbidity and sociodemographic characteristics will be analysed. For the association analyses, multivariate logistic regression models will be used adjusting for possible confounders.

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