

## DETERMINANTS OF LONG-TERM ANTIMUSCARINIC MEDICATION USE IN WOMEN WITH OVERACTIVE BLADDER

### Hypothesis / aims of study

Antimuscarinic medication forms the mainstay of medical treatment for overactive bladder (OAB)(1). Adherence and persistence with treatment is multifactorial; including patient, disease and treatment factors (2). The relative influence of these factors on an individuals' decision to use prescribed medication is unknown. The aim of this study was to investigate the influence of sociodemographic variables, health related quality of life (HRQL) impact of and beliefs about OAB, and beliefs about using prescription medication on adherence and persistence with antimuscarinic medication in women with idiopathic OAB.

### Study design, materials and methods

Women with symptoms of idiopathic OAB referred from primary care to 2 tertiary Urogynaecology centres were recruited into a prospective study investigating the management of OAB in clinical practice. Patients were recruited into the study prospectively over an 18 month period. After a baseline and 6 week visit, patients were invited for follow-up at 3 monthly intervals for a minimum of 12 months.

Patients who enrolled in the long term follow up study of OAB were offered a prescription for antimuscarinic medication at some point during the study period unless they had contraindications to or did not want to use medication. Persistence with treatment was evaluated by direct questioning about use of medication at each study visit. Patients were asked to complete a number of questionnaires at each of their study visits. Adherence to antimuscarinic medication was assessed using the validated Medication Adherence Report Scale (MARS). The MARS is a self report scale with scores ranging from 0-25. Higher MARS scores are associated with higher adherence to medication. A cut off of score of 22 was used to represent a good level of adherence (88% or more) to treatment. Beliefs about using prescribed medication were assessed using the validated 2 part Beliefs about Medicines Questionnaire (BMQ). The BMQ has a generic subscale which assesses patients' beliefs about doctors' prescribing practices and the harm associated with taking any prescribed medication. The specific subscale of the questionnaire assesses patient perceived necessity and harm from antimuscarinic medication. HRQL impact of OAB was evaluated using the LUTS specific, 9 domain Kings Health questionnaire (KHQ).

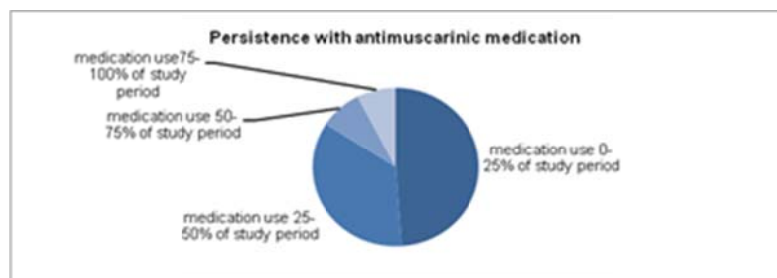
The relative influence of patient and treatment factors affecting persistence and adherence to antimuscarinic medication in women with OAB was investigated using factor analysis on SPSS version 17. The variables identified for factor analysis were; patient age, education level, ethnicity, concurrent medical morbidity and the HRQL impact of OAB at the end of the follow up period. Patients' beliefs about doctors prescribing practices, beliefs about the necessity of the medication and concerns about using antimuscarinic agents and the duration of use of the first prescribed antimuscarinic agent were also included in the analyses.

### Results

251 women (mean age 55yrs) consented to take part in the study. 133 patients (53%) completed 12 months follow-up of which 68 patients (27%) completed a further 12 month follow-up. 11 patients (4%) did not complete a baseline assessment, and 107 patients (43%) dropped out of the study within 6 months. Data from patients who completed follow-up and were prescribed antimuscarinic medication were used in this analysis. 96% of patients were offered pharmacological treatment, of which 4% did not collect their prescriptions.

Persistence with antimuscarinic medication over the study period is shown in the pie chart below.

Persistence with medication is expressed as the duration of medication use as a percentage of the study period.



Factor analysis of variables affecting persistence with antimuscarinic medication showed the role, social and physical limitations and incontinence impact domains of the KHQ to be important. In addition, beliefs about doctors' prescribing practice measured using the generic BMQ subscale, were also important. Factor analysis for persistence with antimuscarinic medication showed lower education level to be associated with greater persistence; additional important variables identified were young age and low medication necessity scores as measured using the BMQ specific subscale. Good adherence to medication (i.e. MARS score of 22 or more) at one year of follow up was used in the factor analyses rather than one and two year data because the number of patients using medication after 12 months was low. In addition, very few patients using medication beyond 18 months of follow up reported consistent use of medication; most of these patients used medication on an 'as required basis'. Factor analysis of the adherence to antimuscarinic medication measured using the MARS questionnaire and patient factors showed that concurrent mental health illness was an important determinant of medication use, followed by persistence with the first prescribed antimuscarinic medication. Age, education level and ethnicity were comparatively weaker determinants of adherence to medication.

### Interpretation of results

Persistence and adherence to antimuscarinic medication in this study was poor overall. Most patients did not use antimuscarinic medication for more than 3 months. Adherence and persistence with antimuscarinic medication in patients enrolled in clinical trials tends to be higher than in clinical practice. In these analyses different factors affecting persistence and adherence to antimuscarinic medication were identified. In the analysis of sociodemographic factors and treatment beliefs; a diagnosed mental health illness was the strongest determinant of adherence behaviour followed by the duration of the first prescribed antimuscarinic agent for OAB. Education level, age and perceived necessity of antimuscarinic drugs measured using the BMQ specific subscale were principal determining factors for persistence with medication. Younger age, lower education level and low perceived necessity of antimuscarinic medication were associated with greater persistence with medication.

### Concluding message

Adherence to treatment is determined by multiple patient, disease and treatment factors. In this study, diagnosed psychological illness and persistence with the first prescribed antimuscarinic agent were the principal determinants of good adherence behaviour. Persistence with treatment was largely determined by education level, younger age and beliefs about antimuscarinic medication. The association between low perceived necessity of antimuscarinic medication and better persistence seems counterintuitive however patients using medication on an 'as required' basis are likely to judge the necessity of the medication as lower than treatment for a potentially life-threatening condition such as hypertension. It is likely that patients using medication in certain situations such as long flights or days out will report high persistence but low adherence. The perceived necessity of antimuscarinic medication will therefore be low for the majority of the time. The data from this study does not aid in creating the profile of an ideal compliant patient. However, recognising those patient factors which may influence individuals' use of and adherence to antimuscarinic medication may help clinicians to target educational interventions to their patients.

### References

1. Haab F, Castro-Diaz D. Persistence with antimuscarinic therapy in patients with overactive bladder. *Int J Clin Pract* 2005 Aug;59(8):931-7.
2. Garfield S, Smith F, Francis SA, Chalmers C. Can patients' preferences for involvement in decision-making regarding the use of medicines be predicted? *Patient Educ Couns* 2007 Jun;66(3):361-7

<b><i>Specify source of funding or grant</i></b>	<b>No external funding</b>
<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>St Thomas' Hospital Ethics Committee</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>