

Patients and Physicians Perceive Once-Daily ICS to Be a Significant Aid to Compliance in Asthma Treatment: Two Canadian Studies

Authors J. L. Jarry, PhD; R. B. Coombs, PhD; A. H. Rattray; F. G. De Maio, BA (Hons); A. Santhiapillai, PhD
Affiliation Health Promotion Research, Inc, Toronto, Ontario, Canada

ABSTRACT

Improved compliance with inhaled corticosteroids (ICS) has the potential to reduce asthma morbidity and mortality. Once-daily ICS are becoming available and may promote compliance in asthma patients. However, patients must believe that this formulation will benefit them. Compliance with ICS is influenced by patient perception of the side effects and their knowledge of the proper use and mode of action of ICS. Furthermore, the utilization of once-daily ICS will depend on physician perception of the efficacy of these formulations and of their capacity to improve compliance. Factors likely to influence this include knowledge about asthma, its treatment, and appropriate prescribing. Study 1 was a telephone survey of 224 Canadian patients with asthma on ICS therapy. Study 2 was a representative mail survey of a stratified random sample of 250 Canadian general practitioners and family physicians (69% response rate). Patients reported low levels of compliance, and only 16% met Canadian criteria of asthma control. Eighty-seven percent of patients reported preferring once-daily dosing, and 66% expressed that their compliance would improve with this dosage regimen. Multivariate modelling showed that in patients, poor current compliance and high knowledge of ICS predicted a preference for a once-daily formulation. Physicians tended to underprescribe ICS. They estimated that once-daily ICS would improve compliance by 34% compared to a multidose daily regimen. Physicians showed a readiness to prescribe once-daily ICS, if their efficacy was proven. They also believed that non-compliant severe asthma patients would particularly benefit from once-daily dosing. The results of these studies show that once-daily ICS treatment in Canada is perceived by both patients and physicians as a means to improve asthma control and compliance.

Introduction

- Compliance with inhaled corticosteroids (ICS) is poor and hinders effective patient asthma management.¹⁻²¹
- Research in other chronic illnesses has shown that once-daily formulations improve compliance and therapeutic coverage.²²⁻³⁴
- Poor compliance with asthma therapy may be attributable to a deficit in patient knowledge of the disease process and mode of action of therapy.^{35,36} Sufficient patient knowledge is required to maintain the motivation necessary for continued treatment compliance.^{36,37}
- Patient access to once-daily ICS will depend on physicians' readiness to prescribe this formulation.
- The goal of these studies was to assess patient and physician perceptions of the compliance advantages of once-daily ICS.

Methods

- Study 1 was a telephone survey of 224 Canadian patients with asthma on ICS therapy.
- Study 2 was a representative mail/fax/telephone survey of a stratified random sample of 250 Canadian primary care physicians.

Results

Patient Survey

- The distribution by province, the age, and the gender distribution of the patient sample were similar to that of Canadians with asthma in general (60% females).^{3,38,41}
- Only 16.1% of the respondents met criteria for adequate control according to the 6 control criteria outlined in the Canadian Consensus Guidelines (1999).⁴²
- Only 47.7% of patients took their ICS exactly as prescribed every day of the month.
- A once-daily dose formulation was preferred by 86.5% of the respondents versus 13.4% who preferred 2 or more daily doses ($\chi^2_{(1)} = 121.15, P < .001$; Figure 1).
- 66.2% thought that they would be more likely to take their medication as prescribed if they were supposed to take it only once per day.
- Only lower self-assessed compliance over the last 3 months predicted projected compliance improvement with a once-daily ICS ($F_{(1,205)} = 5.51, P < .05$; Figure 2).
- Logistic regression analysis indicated that poor current compliance and high knowledge of ICS use and mode of action predicted a preference for a once-daily ICS formulation ($\chi^2_{(2)} = 6.5, P < .05$).

Physician Survey

- Of the 250 physicians randomly selected from a database of all Canadian general practitioners and family physicians (N = 26,714), 183 met the inclusion criteria for this study. The final sample of 127 physicians represents a 69% response rate among those who were eligible.
- The physicians' province of practice, their language, and their gender distribution were adequately representative of Canadian physicians.³⁸
- ICS tended to be underprescribed, with 59.3% of patients with mild asthma and 10.6% of patients with moderate asthma receiving only a short-acting bronchodilator.
- Most were favourable towards prescribing a once-daily ICS for mild to moderate, and for severe asthma (Figure 3).
- Physicians felt that 34% more patients would be compliant with a once-daily ICS, compared with current therapies of 2 or more doses per day.
- Physicians felt that highly noncompliant patients with severe asthma would benefit significantly more from a once-daily ICS than highly noncompliant patients with mild to moderate asthma ($t_{(119)} = 3.55, P < .001$; Figure 3).

- Significantly more physicians felt that a once-daily ICS could be as efficacious as a twice-daily ICS for mild to moderate, than for severe asthma ($t_{(118)} = 7.58, P < .001$; Figure 3).
- A stepwise multiple regression with 13 potentially relevant predictors retained only the extent of belief in the efficacy of once-daily ICS for the treatment of mild to moderate asthma as a significant predictor of readiness to prescribe a once-daily ICS for mild to moderate asthma ($F_{(1,105)} = 18.64, P < .001$; Figure 4).
- Readiness to prescribe a once-daily ICS for severe asthma was significantly predicted only by the belief in the efficacy of a once-daily ICS for severe asthma ($F_{(1,102)} = 52.26, P < .001$).

Figure 1. Patient Dose-Per-Day Preference and Projected Compliance Improvement with a Once-Daily ICS

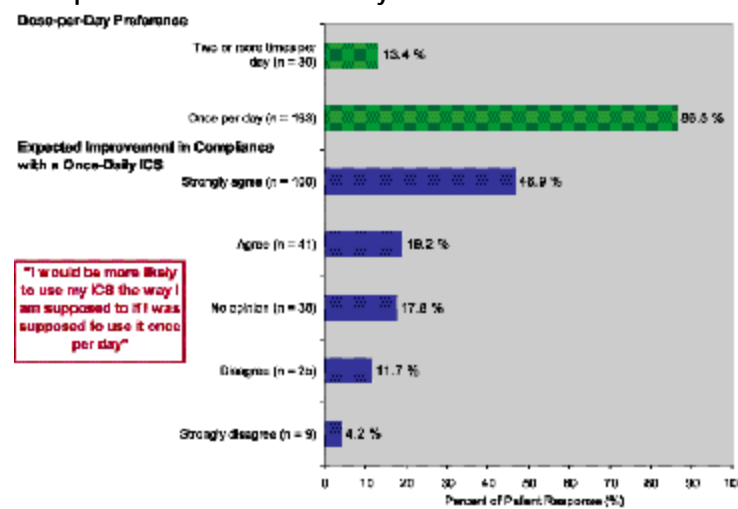
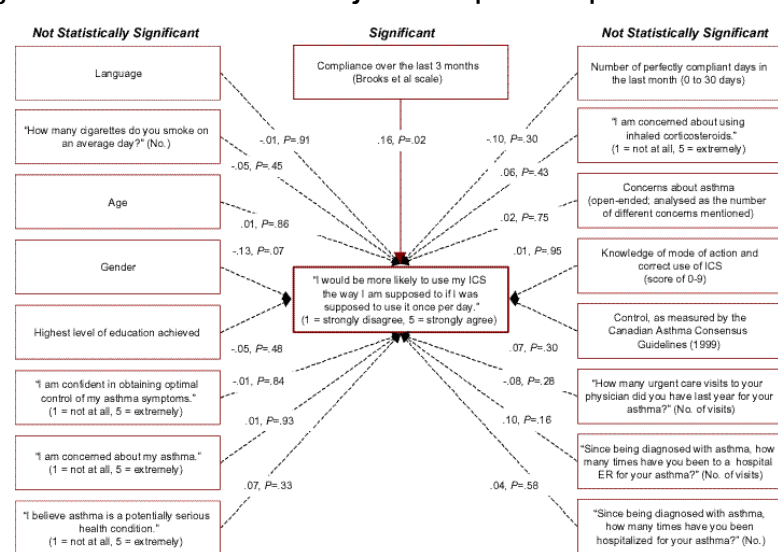


Figure 2. Predictors of Patients' Projected Compliance Improvement



Only poor compliance over the last 3 months (measured by the Brooks et al scale) explained unique variance ($R^2 = 0.16, F_{(1,205)} = 5.51, P < .05$). Values refer to β values and level of significance associated with each variable initially entered into the model.

Figure 3. Physician Perceptions of Once-Daily ICS Therapy

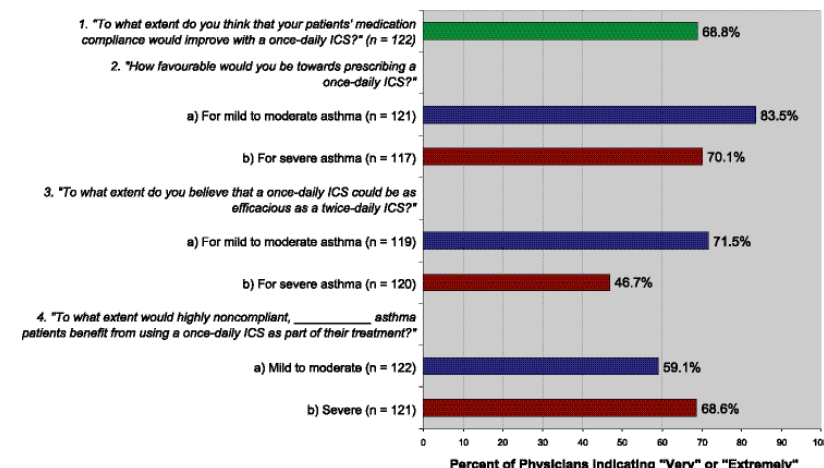
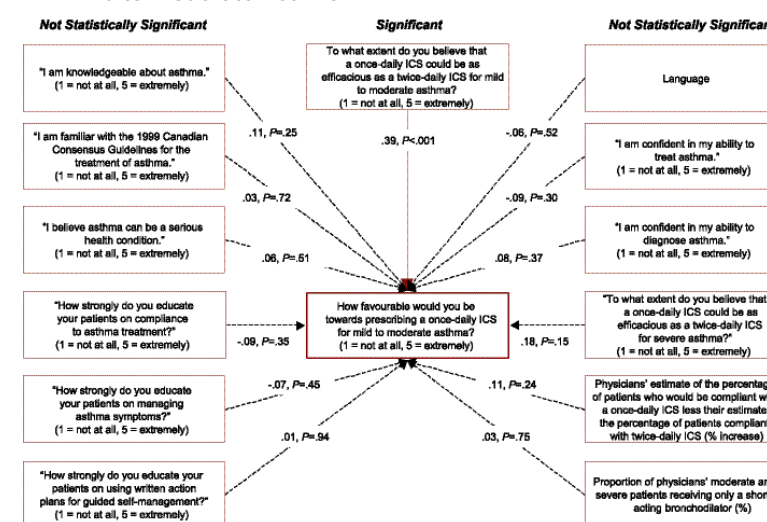


Figure 4. Predictors of Physicians' Readiness to Prescribe a Once-Daily ICS for Mild to Moderate Asthma



Only the belief in the efficacy of a once-daily ICS for mild to moderate asthma predicted readiness to prescribe a once-daily ICS for patients with mild to moderate asthma ($R^2 = 0.14, F_{(1,105)} = 18.64, P < .001$). Values refer to β values and level of significance associated with each variable initially entered into the model.

CONCLUSIONS

- The results of these 2 surveys showed that patients and physicians perceive a once-daily ICS as a significant aid to improve asthma control and compliance.
- Patients who are struggling with poor compliance may also be aware that a simplified regimen would favourably influence their medication compliance.
- Physicians are prepared to prescribe a once-daily ICS provided that its efficacy be proven.
- This dosage formulation is promising given the important role of noncompliance in asthma morbidity and mortality.