5 Relationship between asthma medication classes

Key points

- Individuals who were dispensed more prescriptions for inhaled corticosteroids were also more likely to be dispensed more prescriptions for other classes of asthma medication.
- Among concession card holders who had used inhaled corticosteroids, 72% had one or more prescriptions for short-acting beta agonists and 26% were also prescribed oral corticosteroids.
- Approximately 62% of people who were prescribed inhaled corticosteroids were also prescribed long-acting beta agonists.
- Only 3.3% of individuals who were dispensed long-acting beta agonists were not dispensed any inhaled corticosteroids during the study period.

5.1 Introduction

The ability to identify prescriptions that were dispensed to the same individuals in the PBS data presents an opportunity to study the relationship between the use of different asthma medications by the same person. The use of two or more asthma medications by the same person may give valuable insights into the patterns of asthma medication use. In particular, inhaled corticosteroids are used to control persistent asthma and if underused may result in poorly controlled asthma with higher use of short-acting beta agonists and oral corticosteroids (Anis et al. 2001; Suissa et al. 2002). Furthermore, the combination of long-acting beta agonists with inhaled corticosteroids would ideally lead to reduced amounts of inhaled corticosteroids without requiring greater amounts of short-acting beta agonists and oral corticosteroids.

In this chapter, the use of short-acting beta agonists, oral corticosteroids and long-acting beta agonists was assessed in relation to use of inhaled corticosteroids.

5.2 Methods

Analysis of the use of short-acting beta agonists and oral corticosteroids with inhaled corticosteroids was limited to the subgroup of people in whom data on all medication classes were available (that is, concession card holders). However, the analysis of long-acting beta agonists with inhaled corticosteroids included data for all patient beneficiary categories. The number of prescriptions dispensed in each medication class to each individual were summed and the following were then calculated:

- the proportion of people taking short-acting beta agonists, oral corticosteroids or long-acting beta agonists who also used inhaled corticosteroids

- the number of prescriptions dispensed for short-acting beta agonists, oral corticosteroids or long-acting beta agonists in relation to the number of prescriptions dispensed for inhaled corticosteroids.

5.3 Results

Nearly 30% of concession card holders who had been dispensed inhaled corticosteroids did not have a record of short-acting beta agonists dispensed through the PBS (Figure 5.1). Most people who had not been prescribed inhaled corticosteroids had been dispensed three or fewer prescriptions for short-acting beta agonists. However, 8% had been dispensed seven or more prescriptions for short-acting beta agonists. In general, individuals who had more prescriptions dispensed for inhaled corticosteroids were more likely to also have more prescriptions dispensed for short-acting beta agonists (Figure 5.1).

Similar patterns were observed when the analysis was limited to people aged 5 to 34 years (Figure 5.2), except that there was less use of short-acting beta agonists for each level of inhaled corticosteroid use.

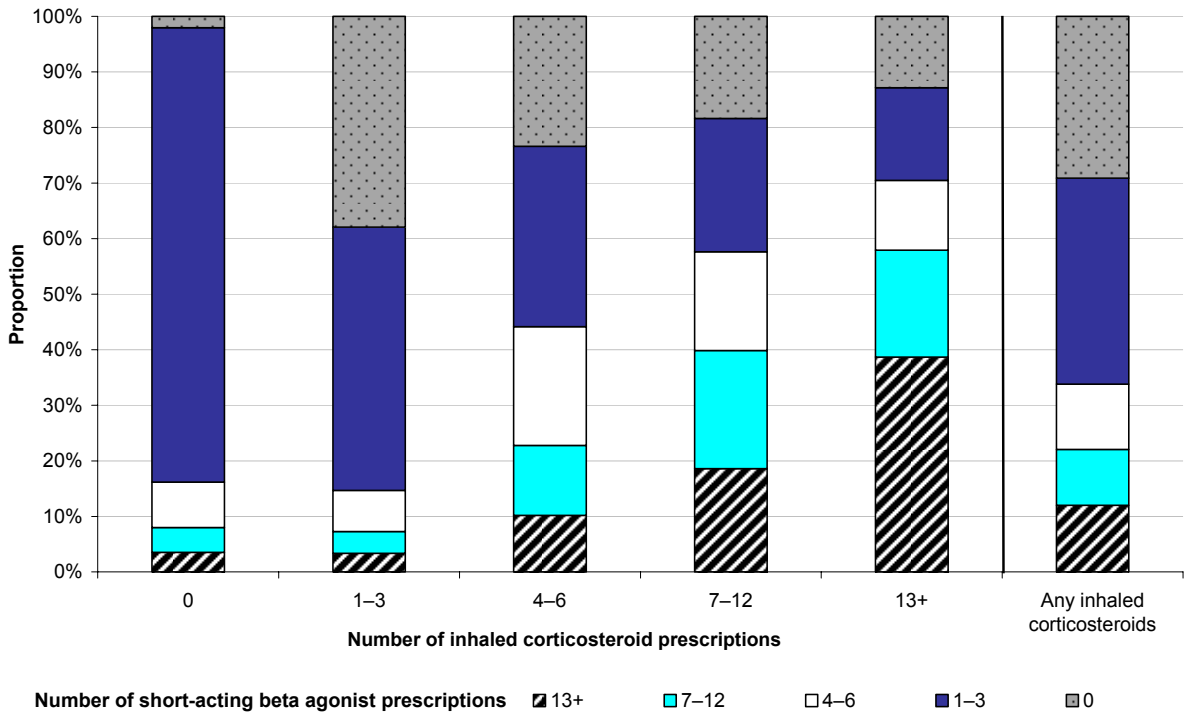

Figure 5.1: Proportion of concessional patients using any inhaled corticosteroids and/or short-acting beta agonists, by number of prescriptions, Australia, 2002–03 to 2003–04

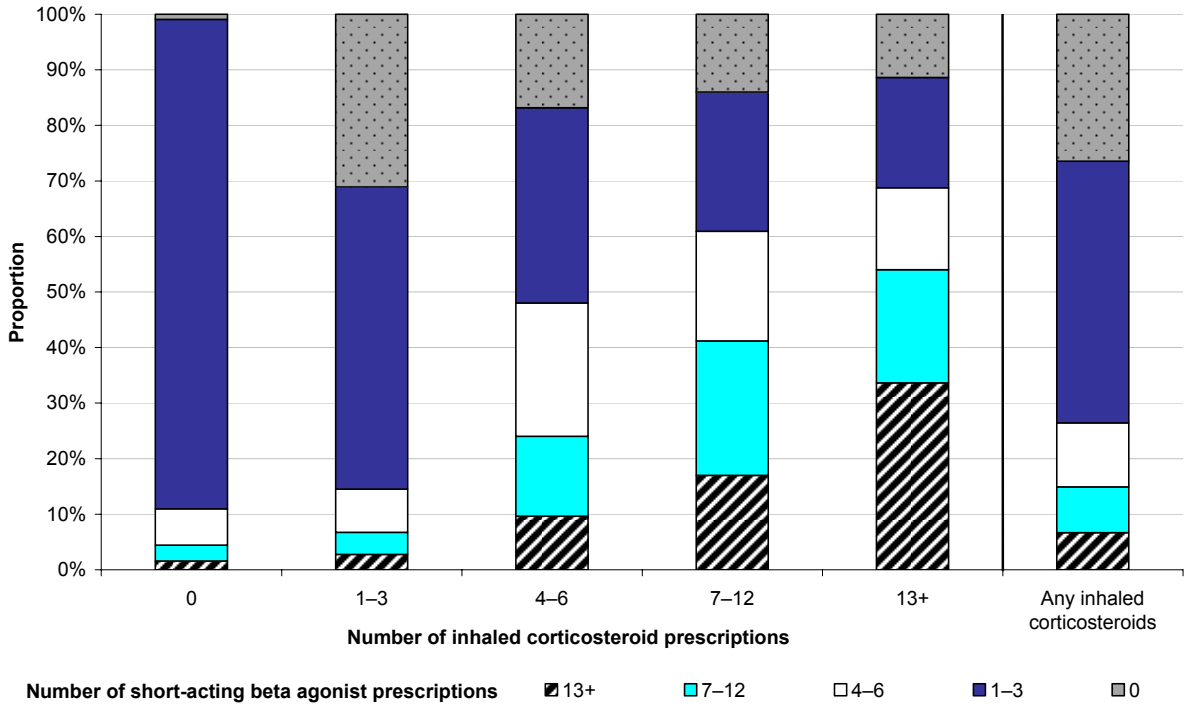

Figure 5.2: Proportion of concessional patients aged 5 to 34 years who were using inhaled corticosteroids and/or short-acting beta agonists, by number of prescriptions, Australia, 2002–03 to 2003–04

Among all concessional patients who had a prescription dispensed for short-acting beta agonists, long-acting beta agonists and/or inhaled corticosteroids during the study period, 20% also had at least one prescription for oral corticosteroids over the same period. Overall, 26% of concession card holders who had used any inhaled corticosteroids had one or more prescriptions dispensed for oral corticosteroids (Figure 5.3). The proportion of these individuals who had received oral corticosteroids and the number of prescriptions for oral corticosteroids rose with increasing use of inhaled corticosteroids (Figure 5.3). A smaller proportion of people aged 5 to 34 years who had used respiratory medications had a prescription dispensed for oral corticosteroids during the study period. The trend for increasing use of oral corticosteroids with increasing use of inhaled corticosteroids was also observed in this age group (Figure 5.4).

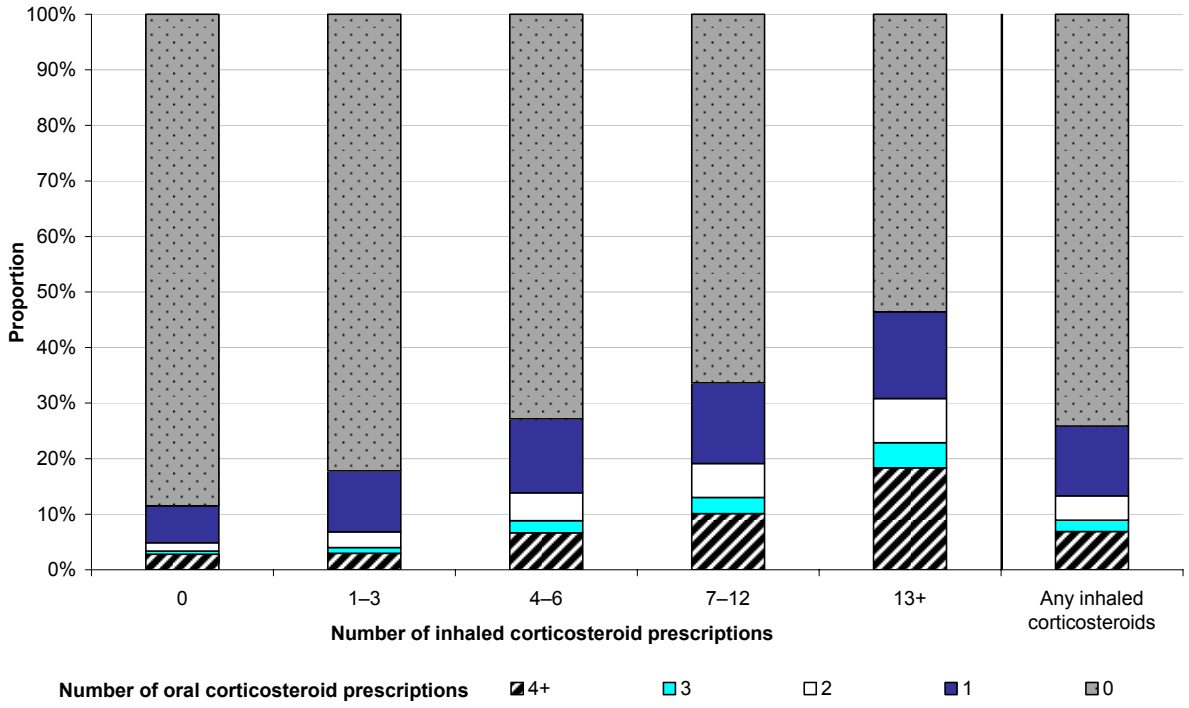

Figure 5.3: Proportion of concessional patients using any inhaled corticosteroids and/or oral corticosteroids, by number of prescriptions, Australia, 2002–03 to 2003–04

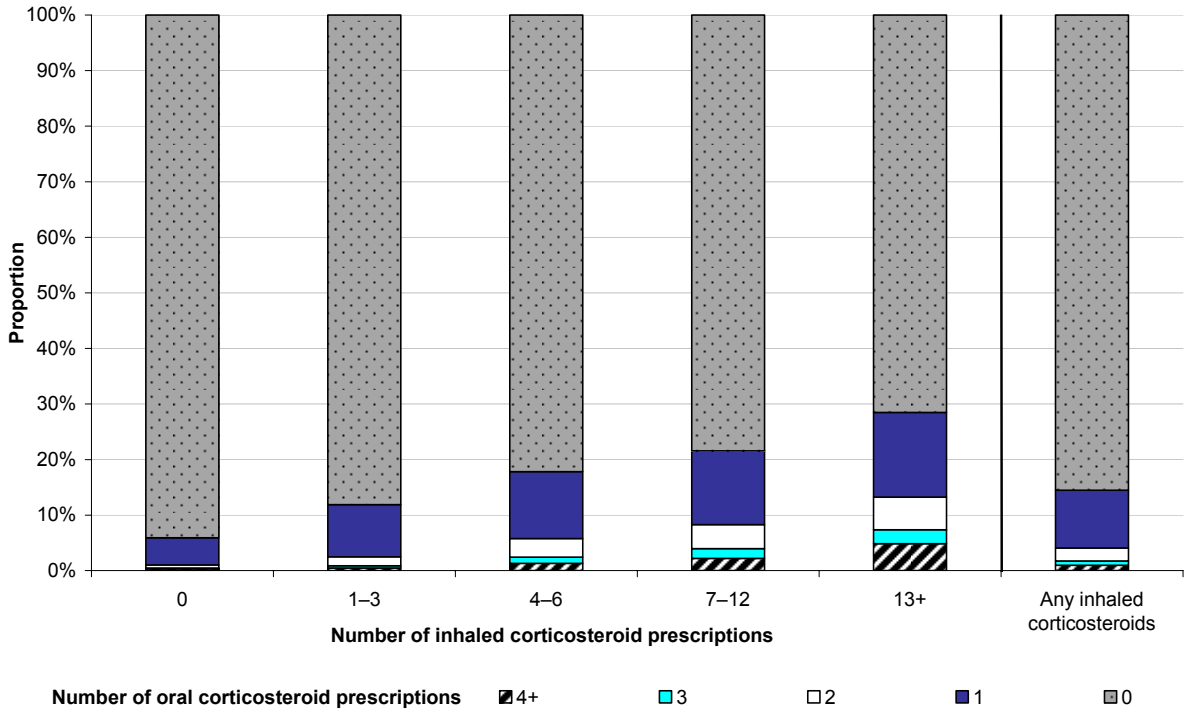

Figure 5.4: Proportion of concessional patients aged 5 to 34 years who were using any inhaled corticosteroids and/or oral corticosteroids, by number of prescriptions, Australia, 2002–03 to 2003–04

Approximately 62% of individuals who had a prescription dispensed for inhaled corticosteroids had at least one prescription for long-acting beta agonists. This included 6.8% of users of inhaled corticosteroids who had one or more prescriptions for long-acting beta agonists in a non-combined formulation and 58.9% who had one or more prescriptions for long-acting beta agonists in a combined formulation (that is, combined with inhaled corticosteroids) (data not shown). Among 5 to 34 year olds, these proportions were 59.6% overall, with 3.7% using non-combined and 57.6% using combined formulations respectively (data not shown).

Only 5% of individuals who were not using any inhaled corticosteroids used long-acting beta agonists. As the number of inhaled corticosteroid prescriptions increased, the number of long-acting beta agonist prescriptions also increased (Figure 5.5). Among people who used any long-acting beta agonists, 3.3% were not dispensed any inhaled corticosteroids during the study period (data not shown). A similar pattern was observed among people aged 5 to 34 years (Figure 5.6).

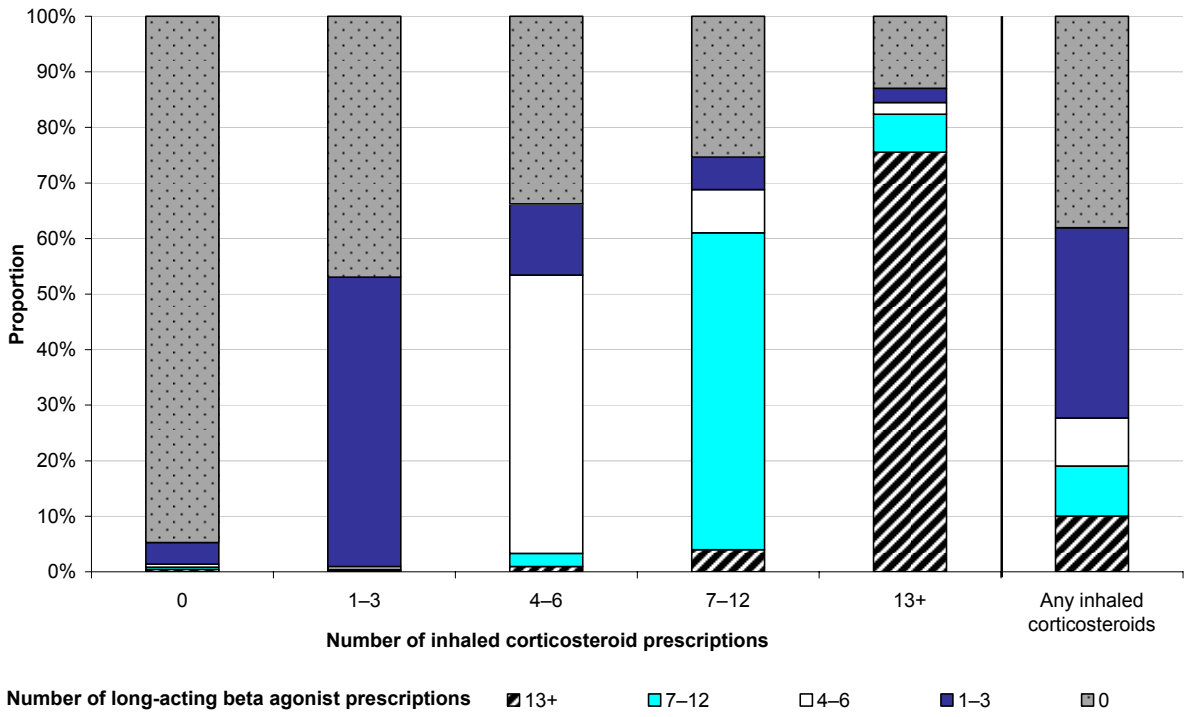

Figure 5.5: Proportion of patients using any inhaled corticosteroids and/or any long-acting beta agonists, by number of prescriptions, 2002–03 to 2003–04

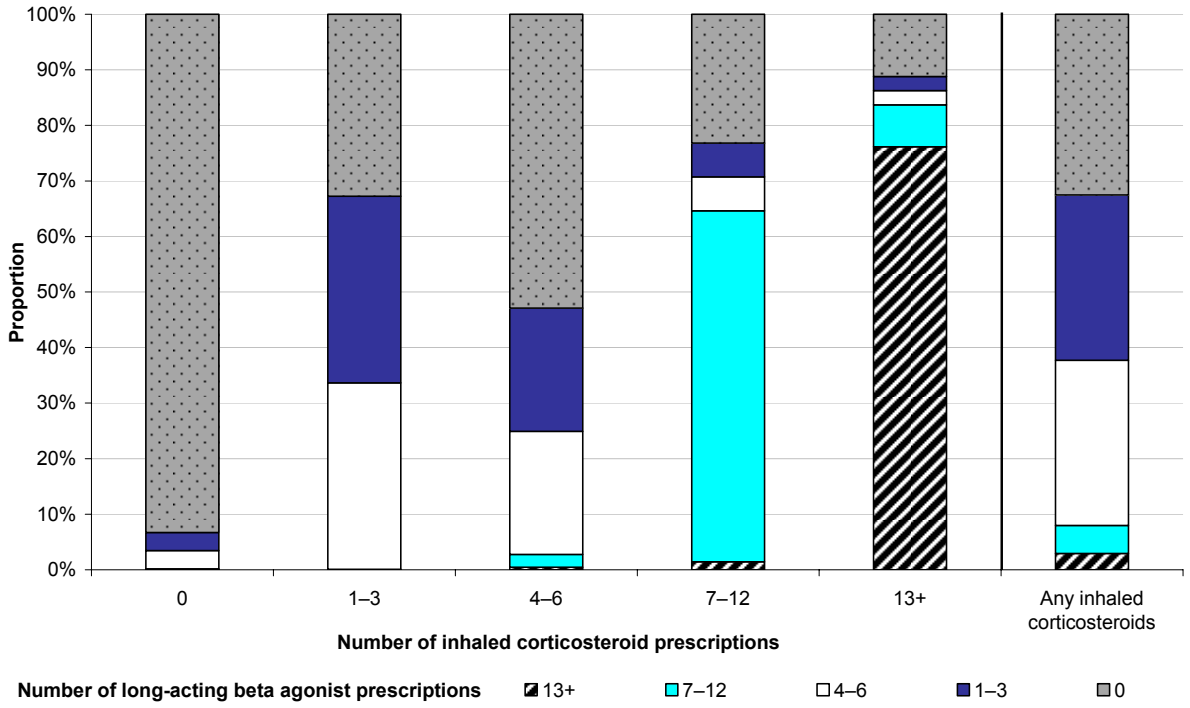

Figure 5.6: Proportion of patients aged 5 to 34 years using any inhaled corticosteroids and/or any long-acting beta agonists, by number of prescriptions, Australia, 2002–03 to 2003–04

5.4 Discussion

Individuals who had more prescriptions dispensed for inhaled corticosteroids were more likely to also have more prescriptions dispensed for short-acting beta agonists and oral corticosteroids. Interpretation of these findings is not straightforward. On the one hand, people with more severe asthma are more likely to require higher amounts of all medications and so this finding may simply reflect disease severity. On the other hand, correct use of inhaled corticosteroids should ideally control asthma symptoms in most individuals. If the disease is well controlled by regular use of inhaled corticosteroids, then the use of short-acting beta agonists and oral corticosteroids should reduce.

Around 30% of concession card holders who had been prescribed inhaled corticosteroids had not been subsidised for any short-acting beta agonist prescriptions. This may reflect a group of individuals who had well-controlled asthma, not requiring any 'reliever' medications. However, it is likely that some of these people purchased short-acting beta agonist inhalers over the counter, even though, as concession card holders, they were entitled to receive this medication at a cheaper price on prescription.

More inhaled corticosteroids were also associated with greater use of long-acting beta agonists. This probably reflects the dominant use of combination therapy that has been observed in recent years (ACAM 2005).

Further studies are needed to explore the relationships and effects of different asthma medications taken by the same individual.