Cough mixtures: rational or irrational prescribing in Hong Kong?

William CW Wonga, James Dickinsonb and Cynthia Chan


Objectives. To investigate the extent and how cough mixtures are prescribed, and what conditions or specific groups of people would contribute to its prescription in Hong Kong.

Methods. Using diagnosis and drug data obtained from logbooks submitted by participants in the diploma in family medicine course between 1999 and 2003, we selected and analysed all patients with a diagnosis of cough or cough-related illnesses as well as cough mixtures that were used to treat them.

Results. This study confirmed that cough-related illnesses were common in the Hong Kong primary care setting and cough mixtures were used quite liberally irrespective of the patients’ age and sex. Combination preparations accounted for over half of the prescriptions and cough mixture was used less in severe cases when antibiotics were given. Private doctors working in the public sector.

Conclusion. Given the current health care system, inappropriate and over-prescribing of cough mixtures can be improved by promoting health education and awareness among patients seeking medical help for this common medical condition.

Introduction

Cough is the most common symptom for which patients seek medical attention1 and cough mixtures are frequently prescribed in primary care. Nearly 400 000 litres of cough mixtures were dispensed by 48 government outpatient clinics in 2001 (Private communication; November 2002). The experience and extent of cough mixture use in private practice is likely to be even greater. However, the clinical value of many cough mixtures is debatable2 and their use in children and the elderly is controversial. Therefore, we measured the prescribing pattern of cough mixtures amongst practising primary care doctors in Hong Kong.

Methods

Logbooks containing data of diagnoses and for 50 consecutive cases were provided by doctors attending the Family Medicine postgraduate diploma course of The Chinese University of Hong Kong between 1999 and 2002. Diagnoses were coded with International Classification of Primary Care (ICPC-2) and drugs by WHO Anatomical Therapeutic Chemical (ATC) classification. The data were double entered and then compared to ensure accuracy. The final dataset was tabulated using The SAS System for Windows V8. For this analysis, we selected all patients with a presenting symptom of cough or a diagnosis of any causes of cough listed in a commonly used text.3 We examined doctor, patient and illness characteristics that were associated with prescribing cough mixtures.

Results

There were 208 doctors (21.6% female) with 10 499 patient encounters (55.2% female) in our database. Cough-associated conditions were listed in 4631 patients (44.1%), among which 3501 (75.6%) were upper respiratory tract infections (URTI). Table 1 shows that cough mixtures were prescribed for 63.1% of these patients, lower for asthma (38.9%). Polypharmacy was common: an average of 1.3, while three or more cough mixtures were given to 77 patients in one consultation. Among the cough mixtures, 1419 (37.0%) were simply expectorants and 529 (13.8%) contained only narcotic cough suppressants while 1885 (49.2%) were combination preparations, usually with multiple ingredients. Many of these were compounds containing ipecacuahna, cocillana, camphorated opium, euphorbia, and other botanicals that have disappeared from modern pharmacopoeia.
A cough mixture was prescribed to 30.3% (10/33) of infants, 50.7% (617/1217) of children (1–12 years old), 66.8% (1950/2917) of adults and 76.5% (306/400) of those over 65 years diagnosed with cough. Among these, cough mixtures containing opioid were given to 8 of the 10 infants, 61.1% (377/617) of the child patients, 60.2% (1173/1950) of adults and 35.9% (110/306) of those over 65.

Patients who received antibiotics were less likely to receive cough medicines [550/958 versus 1611/2542; Relative risk (RR) 1.10; 95% confidence interval (CI) 1.04, 1.18]. Private doctors were three times more likely than those in the public sector to give cough mixtures with opioids (429/3414 versus 20/469; RR 2.95; 95% CI 1.90, 4.57) and twice as likely to give cough mixtures containing opioids, nasal decongestants and antihistamines (843/3414 versus 54/469; RR 2.15; 95% CI 1.66, 2.78).

**Discussion**

We found high rates of prescribing cough mixtures, which are likely to relate to doctors dispensing for an all-inclusive fee and hence prescribing drugs that are usually bought over-the-counter in most countries. However, some prescribing runs against recommendations about drug safety. There is a suggestion that in serious cases, antibiotics are given, and cough mixtures are given to others. Cough mixtures may be used as a trade-off since they are perceived as ‘safe’ or ‘soft’ options. This practice is encouraged by the ‘gift relationship’ in the dual public/private health system where ‘doctor-shopping’ behaviour is common.4

There is a local belief that if cough is not controlled quickly, it will lead to serious illnesses or poor respiratory health. Private doctors were, therefore, more likely to prescribe more expensive preparations such as opioid-containing mixtures and combination cough medicines suggesting that the desire to control symptoms is more important than cost.

In this paper, we have demonstrated a pattern of poor prescribing practice, but such behaviour is not unique to Hong Kong: it is similar to current Malaysian and Indian practice and British practice prior to and in the early years of the National Health Service.5 These patterns may change when there is a strong push for higher quality in primary care, and the population becomes more sophisticated in its expectation of health care, with less emphasis on getting multiple drugs as representing value for money.

**Declaration**

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Conflicts of interest: none.

**References**


