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Citation	Hong Kong Practitioner, 2002, v. 24 n. 12, p. 580-581
Issued Date	2002
URL	http://hdl.handle.net/10722/45129
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Antibiotic wastage costs in Hong Kong

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Dear Editor,

Upper respiratory tract infections (URTIs) are the commonest condition for patients to attend their family doctors in Hong Kong.¹ Despite ample evidence from the literature that antibiotics are of limited benefits for URTIs,^{2,3} they are still frequently prescribed.^{4,5}

In our August – December 2001 survey of 1233 members of the Hong Kong College of Family Physicians on their use of antibiotics in URTI patients, 801 responded with a response rate of 65.0%.⁶ Twenty-two percents of the respondents felt that they might be prescribing antibiotics too often for URTIs. On average, they attended to 21.46 URTI patients per day, with a standard error of 1.11.

There are many disadvantages associated with inappropriate drug therapy for example antibiotic resistance, drug allergy and psychological dependency on pharmacological treatment for an otherwise self-limiting condition. Another concern is drug costs. We therefore attempt to estimate the drug costs due to inappropriate use of antibiotics on URTI patients in Hong Kong. In order to do that, we have to make several conservative assumptions:

- there are 3500 primary care doctors who regularly attend to URTI patients,
- only a quarter of the URTI patients were prescribed antibiotics inappropriately by those doctors who felt that they might prescribe too often for URTIs, and zero patients were prescribed inappropriately by the remaining 78% of the doctors,
- only two days antibiotics were prescribed by the doctor on each visit (as this is still the most common practice),
- all the antibiotics were obtained at discounted prices such as those obtained by Hospital Authority.⁷

Since various antibiotics are prescribed for URTI, we therefore carried out the following calculations based on different costs:

- (1) Amoxicillin \$0.3 per 250 mg capsule

If each patient is prescribed 3 capsules per day, the estimated wastage is 6 capsules per visit for a quarter of the

URTIs patients seen by 22% of 3500 doctors who see an average of 21.46 URTI patients per day.

$\$0.3 \times 6 \times 0.25 \times 0.22 \times 3500 \times 21.46 \times 365 = \2.714 Million per year with a standard error of \$0.140 Million.

- (2) Cotrimoxazole (Septrin) \$0.2 per 480 mg tablet

Suppose each patient is prescribed 4 tablets per day, the estimated wastage would be \$2.413 Million per year with a standard error of \$0.125 Million.

- (3) Augmentin \$3.8 per 375 mg tablet

Suppose each patient is prescribed 3 tablets per day, the estimated wastage would be \$34.379 Million per year with a standard error of \$1.778 Million.

We admit these figures provide only a rough guide on the drug costs and may represent huge underestimates due to for example, higher drug costs, higher ratio of inappropriate use of antibiotics for URTI patients and higher percentage of doctors who may prescribe antibiotics inappropriately. They nevertheless provide some information on the scale of the problem.

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