

CHAPTER 1

INTRODUCTION



BACKGROUND AND RATIONALE

Perennial allergic rhinitis is the most common manifestation of allergic diseases which is characterized by sneezing, nasal discharge and nasal blockage caused by sensitivity and exposure to perennial allergens such as house dust, dust mite and animal dander (1,2,3,4). Perennial allergic rhinitis is a chronic non fatal disease and the symptoms are less severe than seasonal rhinitis, however, they are more permanent around the year and may cause an irreversible damage. It can make patients uncomfortable and interfere with their sleeping, eating and life style. In untreated cases, sinus infections, serous otitis media and nasal polyp formation often develop and there is also four times the risk of developing asthma (2).

Antihistamine is the first line pharmacotherapy in the management of allergic rhinitis besides environmental control, corticosteroid, immunotherapy and surgery. There are two generations of antihistamines. The first are the classic H₁-antihistamines which are classified according to the chemical structure. Classic antihistamines have an anticholinergic and sedative effects which are observed in 10% to 25 % of antihistamine users (5,6,7,). The newer antihistamines have pure antihistaminic properties, are less sedating and have a

longer duration of action.

Chlorpheniramine is a classic H_1 -antihistamine of alkylamine derivative which is widely used in the treatment of allergic diseases. Using 4 mg Chlorpheniramine 3 and 4 times a day, however, it gives a different result (8,9). From Simons study (1990) it was confirmed that maximal suppressive effect of histamine-induced wheals of a 4 mg Chlorpheniramine was 35% for up to 12 hours (10), while Bantz's study (1987) confirmed that the suppressive effect of histamine-induced wheals of Chlorpheniramine (8 mg) was more than 55% for up to 24 hours and the half-life time was 21-25 hours. The latter study however, did not evaluate the efficacy of Chlorpheniramine (8 mg) in terms of relieving symptoms of allergic rhinitis (5).

Cetirizine, one of the new generation H_1 - antihistamines is a derivative of classic antihistamine Hydroxyzine. It has less sedative adverse effect and it is used once daily dose. The half-life time of Cetirizine (10 mg) is 7 hours and the maximal suppressive effect on histamine -induced wheals of more than 80% for up to 24 hours (10). Cetirizine was effective for relieving symptoms of perennial allergic rhinitis with a good result in 62 % of the patients (7,10).

MAGNITUDE OF THE PROBLEM IN THE TREATMENT OF ALLERGIC RHINITIS IN INDONESIA

Indonesia is a tropical country with a population of more than 200 million. There is very few epidemiological data about allergic rhinitis. In some referral hospitals, however, the prevalence was reported to be about 4% to 7%. In Kariadi hospital (where the study was done), perennial allergic rhinitis occurs in about 5% to 7% of Ear Nose and Throat out-patient department. In a community study of one village among children less than 14 years (1989) it was reported that the prevalence of allergic disease was 25.5% and the prevalence of allergic rhinitis was 10.2% (11).

The most important allergen in Indonesia is house dust mite because there is an optimal temperature and humidity around the year which is favorable for their growth (25-30⁰ C with a 50%-80% relative humidity). Therefore, most of the patients belong to perennial allergic rhinitis where they may have symptoms around the year and some patients may need long term symptomatic treatment because avoidance is difficult to be done.

Antihistamine is the first line pharmacologic treatment of allergic disease in Indonesia, because :

1. Allergen avoidance is very difficult to be done.
2. Long term systemic corticosteroid is not safe.
3. Topical corticosteroid is still very expensive for most of the patients.
4. Specific immunotherapy is also very costly and it can be done in some of referral hospitals only.

Chlorpheniramine is one of H₁-antihistamine widely used in Indonesia because it is a potent antihistamine. It is not expensive and easily available in most of health care centers/ facilities. However, the usage seems to be limited due to its sedation adverse effect at day time because it is used by conventional dose of 4 mg three times a day. Sedation effect of classic antihistamines occurred in 2 -4 hours after administration of the drug.

Considering that the half-life time and the efficacy of 8 mg Chlorpheniramine is up to 24 hours, so to minimize the sedation effect at day time during the treatment, a once daily dose of 8 mg Chlorpheniramine given at night would be an appropriate and reasonable alternative regimen.

OBJECTIVES

Objectives of this study are :

1. To evaluate the success result of 8 mg Chlorpheniramine once daily dose in terms of relieving symptoms of perennial allergic rhinitis and to assess whether there is a difference in the success result between once daily dose of 8 mg Chlorpheniramine and 10 mg Cetirizine in the treatment of perennial allergic rhinitis .
2. To assess whether there is a difference of adverse effects between the two drugs during the treatment of perennial allergic rhinitis patients.
3. To evaluate which one is more cost effective, once a day of 8 mg Chlorpheniramine or 10 mg Cetirizine in the treatment of perennial allergic rhinitis patients.