Indian J Physiol Pharmacol 1997; 41(2): 183–184

LETTER TO THE EDITOR

EFFECTS OF OXYPHENONIUM BROMIDE AND SOME ANTIHISTAMINICS (H_1) ON SALIVARY FLOW IN HUMAN VOLUNTEERS

Sir

(Received on December 27, 1996)

Antihistaninics of H_1 type are used for conditions like allergy, motion sickness, coughs and colds (1). They commonly produce dry mouth as side effect (2, 3). Decrease in Salivary Secretion by antihistaminics is an important indicator of their anticholinergic action (1). The, newer antihistaminics H_1 terfenadine, astemizole and cetrizine have minimum antimuscarinic activity (1, 4).

Few comparative trials are available on the effect of different antihistaminics on salivary volume. This study was therefore undertaken to evaluate the effect of a standard antimuscarinic agent with six traditional H_1 antihistaminics and three new H_1 antihistaminics on salivary volume in normal human volunteers. A double-blind placebo controlled clinical trial was planned in six healthy human volunteers, three males and three females (age 30-40 yrs). An informed written consent was taken from volunteers and the project was approved by the Institutional Ethics Committee. The volunteers were asked to refrain from smoking, betels chewing and other drugs, at least 7 days prior to study, and during the study. Standard breakfast of two slices of bread and a cup of tea was given at 8 AM. Thereafter, tea, coffee or food was not allowed till completion of studies. Saliva was collected according to the method of Blum AL et al (5). Two control samples were taken at an interval of 10 min. The range of control salivary volume was 4.5 to 6 ml. Drugs (Table I) were given in gelatin capsules orally as single dose with 100 ml of water to the volunteers in random order according to Latin square design. Washout period of one week was given after every drug administration.

TABLE I : Decrease in Salivary Volume (SV/10 min) after 1 hr and 2 hr of drug administration.

Drug	*Dose mg*	*Decrease in Salivary Volume (ml) (Mean ± SEM)*	
		1 hr	*2 hr*
1. Placebo		0.04 ± 0.01	0.13 ± 0.0
2. Oxyphenonium bromide	10	1.14 ± 0.5*	0.90 ± 0.06
3. Promethazine Hydrochloride	50	1.30 ± 0.41**	1.50 ± 0.42**
4. Diphenhydramine Hydrochloride	50	1.02 ± 0.23*	1.78 ± 0.72**
5. Pheniramine maleate	50	1.20 ± 0.28*	1.20 ± 0.18*
6. Chlorpheniramine maleate	4	0.34 ± 0.08	0.42 ± 0.04
7. Embramine Hydrochloride	50	0.82 ± 0.03*	1.26 ± 0.51**
8. Mebhydroline	50	1.14 ± 0.31*	1.23 ± 0.42**
9. Astemizole	10	0.20 ± 0.01	
10. Terfenadine	60	0.10 ± 0.02	
11. Cetrizine	10	0.20 ± 0.01	

*P < 0.05; **P<0.01

Comparison between values of placebo and values after each drug at 1 hr and 2 hr.

Saliva was collected one hr and two hr after drug administration. Volunteers were asked to mark on the symptom check list hourly for 24 hrs.

Oxyphenonium bromide and all antihistaminics except chlorpheniramine maleate and newer H_1 blockers decreased salivary volume significantly as compared to placebo values (Table I). All drugs except oxyphenonium bromide and newer H_1 blockers produced maximum effect at 2 hr whereas that of oxyphenonium bromide was seen at 1 hr. Subjective symptoms commonly reported were drowsiness and dryness of mouth with most of the drugs except chlorpheniramine maleate and newer H_1 antihistaminics. Less common symptoms were headache, fatigue and numbness of extremities. Drowsiness was marked after diphenhydramine and promethazine. Both these effects lasted for 3-6 hr after these drugs.

The results indicate that oxyphenonium bromide (oral) and most of the antihistaminics except newer antihistaminics under study produced significant decrease in salivary volume. A decrease in Secretion in bronchi may increase the cough reflex. This may be considered important with the older anti-histaminics, which are commonly added in many cough preparations. Drying of the secretions may exaggerate the bronchospasm which may have a deleterious effect in patients of bronchial asthma. In these patients, newer antihistaminics with minimal or no antimuscarinic action may be preferred (6).

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