THE ROLE OF H2-RECEPTORS IN CH. PHARYNGITIS?

Pages with reference to book, From 25 To 26

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In a world overloaded with environmental pollution, suffering from the greenhouse phenomenon and a "hole" in the ozone layer, one is not in the least surprised to see the ever increasing number of cases of sore throat in a city like Karachi. Until a few years ago the major causes of sore throat used to be tonsilitis, rhino-sinusitis, apthous ulcers and acute pharyngitis etc. One would seldom encounter a case of chronic granular pharyngitis and that too in smokers. However, in the last decade or so the incidence of intractable chronic pharyngitis seems to have dominated the scene. The essential features of this ailment being, soreness, dryness, rawness, persistent discomfort, hawking, coughing, repeated necessity to clear the throat and a sense of uneasiness. The appearance of pharynx may vary from generalized hyperaemia to prominence of the posterior pharyngeal bands, or the entire mucosa being studded with tiny mounts of granulation tissue, and palor in old and established cases, giving the pharyngeal mucosa appearance of a parchment membrane, devoid of any mucociliary or secretory activity. Though more commonly seen in adults, and not necessarily smokers of any age or sex is prone to develop it. Its incidence seems to rise during the month of Ramadan, due to obvious increase in consumption of spicy foods and cold drinks. Two factors have been identified and incriminated in its causation. The alteration of pharyngeal pH brought about by the gastro-oesophageal reflux and the defective mucociliary flow. Many people have studied the role of G.E. reflux on the aerodigestive system. It is known to account for varied pathologies, from mild heartburn to the development of the cancer of larynx and the hypopharynx[1]. Amongst them is the development of acid pharyngitis which is particularly common in our population due to dietary, and postural reasons such as 'ruku' and 'sajda' as both these postures aggravate the G.E. reflux[2]. Some other research workers have described that the reflux of gastric contents and acid may be carcinogenic in the oesophagus causing Barrett's oesophagus[2] and Plummer-vinson syndrome[4] non specific laryngitis, contact granulomas hypertrophy of the posterior commissure, crico-arytenoid arthritis, globus hystericus, latent asthma, cpasmodic volatile non-specific cough, and numerous other changes in the tracheo-bronchial tree[5-9]. The second factor responsible for chronic pharyngitis maybe the defective mucociliary flow. The mucosal blanket combined with ciliary activity is responsible for providing a protective layer to the pharyngeal mucosa. Although interrelated mucosal blanket is independent of the ciliary flow, and Gaynor[10] as well as Dalhamn[11] have observed that the ciliary activity may persist even after the cessation of mucociliary flow. Reduction of mucociliary activity may predispose to infection as observed by Sasaki et al[12] and variations in the pH of pharynx appears to have a direct effect upon the mucociliary transport.but not ciliary activity. In fact Hakansson[13] and Gaynor[10] consider the fall in pH to cause increased viscosity of the mucous blanket which may hinder transport. It is also suggested by Lutz et al[14] that pepsin might directly affect the underlying cilia and perhaps the character of the mucous itself. Pharyngeal mucosal ciliary activity and mucous transport system are also influenced by humidity, temperatUre variation, chemicals and polluted air[10]. Karachi's atmosphere is undoubtedly an ideal example of atmospheric pollution and indeed a certain cause of sure throat. In addition to these factors, the possibility of yet another cause cannot be overlooked, as it seems to be gaining grounds, lately. Until 1960's there were only Hi receptors that reacted to histamine and brought about clinical manifestation of what is generally, recognized as allergy or histamine sensitivity. However in 1966, Ash and Schild[15] observed that the effect of histamine in guineapigileum and bronchus could be inhibited by the classical antihistamine mepryamine but that several other actions of histamine, for example stimulation of both gastric acid

secretion and isolated atria, or inhibition of rat uterus could not be inhibited by mepyramine. The observation led them to believe that histamine acted on two types of receptors, those that responded to mepyramine or classical antihistamine, were called Hi-receptors and those that were mepyramine insensitive were labeled as H2-receptors. Black et al[16] were later able to report synthesis of specific H2 -receptor antagonist, which are now frequently used to inhibit histamine-stimulated gastric acid production in peptic ulcers. Invivo and in vitro studies have shown the presence of H2- receptors in the human bronchial system, responsible for mediation of bronchodilation[17]. Primitive pharynx is the birth cradle for the development of the entire aero-digestive system in human beings. In the fourth week of embryonic life an endodermal in folding develops in the floor of the primitive pharynx called the laryngo-tracheobronchial groove, from which subsequently develop the lining bronchial groove, from which subsequently develop the lining epitheium and associate glands of the larynx trachea, bronchi and possibly the respiratory epithelium of the alveoli themselves[18]. Although preliminary evidence is insufficient to claim it but encouraging results were obtained in a study conducted by the author, where in vivo use of Ranitidine for 4 weeks dramatically improved the state of chronic intractable pharyngitis[19] which leads to the presumption of presence of H2-receptors in the pharyngeal mucosa, since the aero-digestive system has a common embryological organism. Purther studies are required in vitro with animal preparations of the pharyngeal mucosa, as well as in vivo clinical trials, to establish the real role of 112-receptors in the causation of chronic pharyngitis. If so, then the entire philosophy of management of this otherwise resistant to treatment condition would require a review.

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