DISCUSSION

The present study entitled "A study on tobacco smoking and its relation to cancer laryngopharynx in Assam" was carried out in 4 (four) well equipped renowned hospitals of Assam, viz. Gauhati Medical College and Hospital, Guwahati; Assam Medical College and Hospital, Dibrugarh; Silchar Medical College and Hospital, Silchar; and Dr. Bhubaneswar Barua Cancer Institute, Guwahati during the period from 1.1.88. to 31.12.92. These hospitals cater the people from different parts of Assam.

Out of 39,65,228 numbers of registered patients of these hospitals, 25,594 were cancer cases being 0.65% of the total. Of 25,594 cancer cases, 2676 were diagnosed to be suffering from cancer laryngopharynx i.e., 10.46% of total cancer patients. This does not reflect the true incidence of the disease, since many district level hospitals failed to maintain proper records of the
patients, for which a huge number of cases could not be included in the present study. In a study at Egypt it has been reported that 2.8% of all cancers are laryngopharyngeal cancer (Parkin DM, 1986). Carcinoma laryngopharynx is considerably high in both the sexes as reported by Dibrugarh cancer registry programme of Indian Council of Medical research (ICMR, 1992), and thus North East India represented one of the highest risk area in the World (Parkin DM, 1986). The commonest age group was 50-60 years of age which is about 34.49% followed by 40-50 years of age group. High percentage of cancer incidence in middle age group is also reported from other studies in India, which is recorded 78% (Parkin DM, 1986). The male female ratio of carcinoma laryngopharynx cases in this study is 4.93:1 against male female population ratio of 1.08:1 in Assam (Census of India, 1991). The reason for striking sex ratio is not immediately obvious. It may be due to cultural and social factors influencing attendance at hospital (Parkin DM, 1986; ICMR, 1984). Carcinoma pyriform sinus is the commonest cancer found in the
laryngopharyngeal region i.e., about 77.20% in the present study. Squamous cell carcinoma is the commonest histopathological type of cancer in the present series of study and i.e., about 98.69%.

In this study it has been found that 67.12% cases are habituated to smoking tobacco but about 80.08% cases are habituated to some or other types of tobacco including smoking tobacco, of which again many are habituated to more than one type of tobacco. In a report of ICMR (1992) it was reported that 74.70% cancer cases are related to tobacco were found in mouth cavity, pharynx, larynx and oesophagus. A firm relation has been established between tobacco and Cancer (Anon, 1971). The list of target sites for tobacco related cancer are impressive, those are lung, oral cavity, pharynx, larynx, oesophagus, urinary bladder, renal pelvis and possibly kidney and liver (Zardige DG et al, 1986). Halfdon Mellor (1988), former Director General of World Health Organisation (WHO), said that tobacco consumption was decreasing by 1.1% per year in the industrialised nations and increasing
by 2.1% per year in the developing countries. In spite of increasing educational programme to teach the people about the harmful effect of tobacco product they are likely to continue the use of tobacco in an uncontrolled manner. Studies on enzyme and lipid profile constituted one of the great advances in biochemistry during past 30 years. In a study by Chisato H et al (1979) raised serum cholesterol level was found in hepato cellular carcinoma. Serum alkaline phosphatase activity was found to be raised in pre-cancerous state of laryngeal and laryngopharyngeal cancer (Lisicwicz J et al, 1978). Franseen and Mclean in 1935 were the first to report on the basis of observation of high levels of this enzymes in the tumour tissue and blood plasma. Serum alkaline phosphatase activity was found to be elevated in two main groups of diseases one affecting the bone and bone forming tissues and the other affecting the liver tissue and biliary systems. Study of the alteration of these biochemical parameters have had none but as a whole, limited applicability in major diseases, including cancer.
It has been reported that the nicotine concentration in samples of plasma, withdrawn within two minutes after smoking were in the range of 0.003 ug/ml to 0.063 ug/ml. In fatal cases, post mortem blood concentration of nicotine were between 11 to 63 ug/ml (Moftal AC et al, 1986). In this series of study 82.98% of cancer laryngopharynx cases showed 0.506 ug/ml to 3.097 ug/ml of nicotine, of which in 59.58% cases nicotine level was 1.424 ug/ml to 3.097 ug/ml and in 23.40% cases it was in between 0.506 ug/ml to 1.424 ug/ml. In 17.02% cases of carcinoma laryngopharynx nicotine level could not be detected under present experimental conditions. Amongst the control group 22.5% volunteers shows nicotine in the blood in between 0.309 ug/ml to 1.424 ug/ml and in 77.50% of control group no nicotine could be detected in the blood. Therefore, non detection of nicotine in blood of both cancer group (17.02%) and in control group (77.50%) may be attributed to some other factors like, time of collection of blood from actual time of ingestion of tobacco, health condition of the individual, variation of metabolic
rate in the individual, food habit of the individual and the type of tobacco that one might have smoke. But the detection of the nicotine in majority of volunteers having cancer, may perhaps be attributed to the non conversion or little conversion of nicotine to its different metabolites and this may perhaps be due to some changes in the system which need further studies to substantiate it. The fact that there is high percentage of nicotine i.e., about 1.424 ug/ml of blood in 59.58% cases in cancer group is sufficient to alert the individual about the possibility of soft target of laryngopharyngeal cancer, if the individual continues to smoke tobacco in the same rate.