

Relationship of ABO Blood Groups in patients with Oral Cancers

S JAMIL N A SALEEM S I AMJAD A R BUTT* M TAYYAB M FAROOQ

Department of Medicine, Lahore Medical College/Ghurki Hospital, Lahore.

Correspondence to Dr. Sajid Jamil, PGMI, Lahore.

Present study was designed to find the association of ABO blood groups with oral cancers. In this study 50 diagnosed cases of oral cancers and 50 healthy controls were selected. ABO blood grouping, complete blood examination was performed in all these subjects. Out of 50 patients 16 were blood group A, 11 group 'B', 8 group 'AB' and 15 belong to group 'O' as compared to controls who were, 14, 15, 3, 18 for blood groups A, B, AB and O respectively. Conclusions: No relationship is found between Oral Cancers and ABO Blood groups.

Keywords: Oral cancer, ABO blood groups

The antigens of the ABO system are an integral part of the red cell membrane and many tissues throughout the body. They are also found in plasma and other body fluids¹. Blood group antigens normally present on the epithelial cell surfaces, have been reported as reduced or lost in neoplastic epithelium, and this loss may provide a marker for malignant change².

It has been demonstrated that certain blood group antigens are over expressed in various human carcinomas. These antigens have been suggested to be involved in cell migration, cell differentiation, cell invasion, apoptosis and cell proliferation. These findings are of diagnostic and prognostic significance³. It was noted that A and H antigens were absent in oral squamous cell carcinoma from blood group A persons, whereas some blood group antigens were over expressed. Therefore blood group antigens may serve as prognostic markers of malignant development in oral epithelium⁴.

In South East Asia, more than 10³ new cases of oral cancers are reported annually, accounting for about 40% of all cancers compared to the 2-5% reported in western countries⁵. A premalignant lesion such as leukoplakia, erythroplakia, lichen planus and submucous fibrosis commonly precedes oral cancers. Betel quid chewing, tobacco smoking, alcohol, nutritional status, gender and age are also important factors associated with increased risk of

oral cancer⁶. It commonly presents as an indolent ulcer. Commonest sites of the lesion are anterior 2/3rd of the tongue, floor of the mouth and inside of cheek. Ninety percent of oral cancers are squamous cell carcinomas, remaining are adenocarcinomas arising from minor salivary glands⁷.

Materials and Methods:

Fifty (50) diagnosed patients of oral cancers were selected from different teaching hospitals of Lahore while fifty healthy control subjects were also included in the study. 2ml of venous blood was collected aseptically in a sterile tube containing 1.5 mg/ml dry ethylene diamine tetra acetic acid (EDTA) for ABO blood grouping.

ABO blood grouping: The presence or absence of A and B antigens on red blood cells was determined by slide and tube methods using anti-A and anti-B sera. The technique adopted was that described by Dacie and Lewis⁸. Chi square test and 'p' value was used to analyze the results and data in the present study. ABO blood grouping and Secretor status of control and patients are shown in table 1. Statistically the differences between experimental and control groups in respect of ABO blood groups and secretor status was not significant ($p > .05$).

Table 1: Association of ABO blood groups & secretor status of Oral Cancer patients with controls

Group	Oral-Cancers (n=50)			Controls (n=50)		
	Total	Secretors	Non-Secretors	Total	Secretors	Non-Secretors
A	16 (32%)	9(56.3)	7(43.7)	14 (28%)	10(71.4)	4(28.6)
B	11 (22%)	6(54.5)	5(45.5)	15 (30%)	12(80)	3(20)
AB	8 (16%)	5(62.5)	3(37.5)	3 (6%)	3(100)	0
O	15 (30%)	8(53.3)	7(46.7)	18 (36%)	14(77.8)	4(22.2)

*Percentage values are in parenthesis.

Association of blood group B with oral cancer $p > 0.05$ (non-significant)

Association of blood group O with oral cancer $p > 0.05$ (non-significant)

Discussion:

In the present study of 50 oral cancer patients, blood groups A, B, O and AB were 32%, 22%, 30% and 16% respectively, while in control subjects, A 28%, B 30%, O 36% and AB were 6%. No significant relation was noted between ABO blood groups and oral cancer cases when compared with controls. Pardhan et al (1970)⁹ noted that A,

B, O and AB were 22.94%, 37.77%, 33.17% and 6.12% respectively in controls and 23.20%, 40.80%, 26.40% and 9.60% respectively in oral cancer patients. They observed an increase in frequency of blood groups B and AB, and a decrease in group O in oral carcinoma cases. A study conducted by Lamey et al (1994)¹⁰ on oral cancer patients showed that 22.8% were group A, 28.8% B, 6% AB and

