

BLOOD GROUPS IN CARCINOMAS OF THE ORAL CAVITY

*Y. N. Gupta**, *Saroj Gupta**, *O. P. Gupta***, and *N. N. Khanna****,

Summary

Distribution of ABO blood groups, their relative frequencies and statistical significance in relation to controls had been done in 172 patients of carcinomas of the oral cavity. In general oral malignancies were found to be statistically significantly high in blood group B ($P < 0.001$), while considering the individual sites, the predilection was also found significant in carcinomas of tongue and alveolus.

Following the discovery of human blood groups by Landsteiner (1900) attention was drawn towards susceptibility of various forms of cancers in relation to blood groups (Allexander, 1921; Johannsen, 1927; Goldfeder and Fershing, 1937) the patients with blood group B and AB were more susceptible to various forms of cancer than those of 'O'. Subsequently Johannsen (1927) found a higher association of 'A' and 'AB' with carcinoma than 'B' and 'O', while, Goldfeder and Fershing (1937) reported a decreased incidence in 'A' but susceptibility in 'B' and 'AB' blood groups. It was Aird et al. (1953) who drew conclusive evidence of the association of blood group A and slightly less strongly in group B with gastric cancers. The literature on blood group in relation to various diseases had been summarised widely by Mourant et al. (1978). The information on association of blood groups and oral malignancies is meager while carcinoma of the oral cavity is quite frequent in North India, consti-

tuting 31.9% of all malignancies (Wahi et al. 1965). Thus the present paper deals with frequency distribution of ABO blood group system in carcinomas of oral cavity and their comparison with general population, its relative incidence and statistical significance.

Material and Methods

ABO blood groups were determined in 172 patients of histologically proved carcinomas of the oral cavity, its relative incidence and statistical significance had been simultaneously compared with 237 normal healthy voluntary donors, as control. The oral cavity malignancies considered in this paper include carcinomas of the lip, cheek (buccal mucosa), alveolus, tongue and palate. The results were compared with other series.

Observations

Table I shows the distribution of ABO blood groups system in oral carcinomas along with their relative frequency and comparison with the distribution of ABO genetic system in normal health population. In general oral malignancies were found to be common in blood group 'B' 101 (58.72%), that is statistically highly significant ($P < 0.001$). When malignancies of individual sites were compared the predilection was found more in carcinoma of the tongue and alveolus ($P < 0.01$ & < 0.05) respectively, while carcinoma of the lip, cheek and palate show only relative increase but statistically non-significant.

+ Department of Pathology

** Department of Ear Nose and Throat

*** Department of Surgery

Institute of Medical Sciences Banaras Hindu University Varanasi—221005, U. P., India

Table I
Distribution of ABO Blood Groups in carcinoma of oral cavity

Blood groups	Control	Lip	Avellus	Cheek	Tongue	Palate
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
A	67 (28.27%)	15 (20.00%)	12 (24.5%)	15 (20.0%)	9 (19.5%)	2 (28.6%)
B	78 (32.9%)	14 (56.7%)	23 (46.9%)	36 (48.0%)	25 (54.35%)	3 (42.8%)
AB	25 (10.5%)	2 (8.0%)	6 (12.28%)	8 (10.66%)	7 (15.2%)	1 (14.3%)
O	67 (28.27%)	4 (16.0%)	8 (16.3%)	16 (21.33%)	1 (14.3%)	1 (14.3%)
Total	237	25	49	75	46	7

Table II
Frequency distribution of various blood groups in carcinoma of the oral cavity

	A	B	AB	O	A/O Relative incidence	X ²	B/O Relative incidence	X ²
Cheek	P 15	36	8	16	0.9375	P 0.80	1.9327	P 0.05
	C 67	78	25	67		0.026192		3.678642
Palate	P 2	3	1	1	2.0000	0.314052	2.5769	0.658334
	C 67	78	25	67		P 0.50		P 0.30
Tongue	P 9	25	7	5	1.8000	1.013142	4.2949	7.933186
	C 67	78	25	67		P 0.30		P < 0.01
Lip	P 5	14	2	4	1.2500	0.103768	3.0064	3.470022
	C 67	78	25	67		P 0.70		P 0.05
Avellus	P 12	23	6	8	1.5000	0.690231	2.4696	4.165044
	C 67	78	25	67		P 0.30		P < 0.05
Total (172)	P 43	101	24	34	1.2647	0.668324	2.5517	13.085406
	C 67	78	25	67		P 0.30		P < 0.001

P — Patient, C — Control.

Discussion

Present study showed that overall oral malignancies are significantly common in blood group B. When relative frequency was compared at individual site with control population there was again a statistically significant trend for predilection of blood group 'B' in carcinomas of tongue and alveolus and a relatively higher incidence in carcinoma of cheek, palate and lip.

On reviewing the literature only limited data was available on blood groups and oral carcinomas. The results are conflicting. Dujarric De La Riviere and Kossovitch (1928) and Huguenin and De Page (1933) found no significant predilection of buccal carcinoma with any of the blood group but there was a relatively higher incidence of buccal cavity carcinoma in group B relative to 'A', 'AB' and 'O'. Hoffbauer (1961) and Kaiser-Heinhardt (1962) found statistically non-significant predilection in group A, while Hartman (1964) failed to find any relationship. Tyagi et al. (1965) found an insignificant preponderance of

oral carcinomas in group A and AB in 266 patients of various oral malignancies. But on analysing data from individual site a definitive statistically significant association of blood group A was found with carcinoma of buccal mucosa, while Mital et al. (1969) found similar trend of oral malignancies particularly of buccal mucosa in group A and O. A preponderance of group 'O' in oral cavity malignancies on the whole with group 'B' increase in cheek and tongue and group 'O' predilection in jaw carcinomas was found by Lahai et al. (1970) while Jayant (1971) failed to find any relationship with blood groups and oral malignancies except in carcinomas of hypopharynx which showed a significant higher trend in group 'B'. Present study falls more in line with Dujarric De La Riviere and Kossovitch (1928), Huguenin and Delage (1933) and Ghosi et al. (1970). However a larger series analysis from different geographic regions are required for better evaluation. Other genetic factors like Rh, sector non-sector status, and other blood group systems should also be studied.

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