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BRIEF COMMUNICATIONS

Distribution of ABO Blood Groups Among Suddha Saura and Lanjia Saura of Eastern Ghats of Orissa

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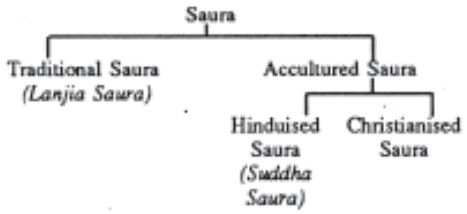
KEY WORDS Blood Group. Tribe. Caste. Village Ecosystem. Ethnohistory.

ABSTRACT This paper reports the distribution of ABO blood groups among Suddha Saura and Lanjia Saura of five village ecosystems on Eastern Ghats of Orissa. The pattern of blood groups distribution in Suddha Saura and Lanjia Saura is different. However, the blood groups distribution pattern of Lanjia Saura of Arakhapada of Ganjam district and Biripadara and Sikkarpai of Rayagada district is similar. The ethnohistory of the Saura tribe of Orissa is described.

INTRODUCTION

Much work has been done on ABO blood groups distribution among various population groups from different regions of India (for details *see* Bhasin et al., 1992). In this paper, an attempt was made to acquire knowledge on the genetical relationships in blood groups distribution among the tribal population of



Suddha Saura and Lanjia Saura inhabiting on the Eastern Ghats of Orissa. The two groups are linked as follows:

According to Das and Patnaik (1984-85), the Sauras are one of the aboriginal tribes of Orissa, who are mainly distributed in Ganjam, Koraput, Sambalpur and Bolangir districts. Culturally speaking, the tribe at present has two broad divisions–the traditional and the accultured. The traditional ones are known as the Lanjia Saura. The accultured Saura are again of two types–the Hinduised and the Christianised. The Hinduised are called Suddha Saura. In this paper the traditional (Lanjia) and the Hinduised (Suddha) Sauras were only taken into consideration. The Lanjia Saura speak the traditional Saura dialect, which is included in Austro-Asiatic language of the Mundari Family. The Suddha Saura speak fluently the local Oriya language, who have almost forgotten their traditional Saura dialect.

Basically, Suddha Sauras are plain dwellers closer to the other caste people and mainly live on agriculture. On the other hand, the Lanjia Sauras live on hill tracts amidst dense forests far away from the modern people, who are basically shifting cultivators and food gatherers.

MATERIALS AND METHODS

For this purpose, five village ecosystems: (1) Bidyadharapur, (2) Tentulia and (3) Arakhapada in Ganjam district, and (4) Biripadara and (5) Sikkarpai of Rayagada district (Formerly Koraput district) were taken for this study. Bidyadharapur and Tentulia are agro-based village ecosystems located in a deforested area, whereas Arakhapada is a forest-based village ecosystem located in a forest

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environment. Biripadara and Sikkarpai of Rayagada district are agro-based village ecosytems located at about 140 km away from Bidyadharapur of Ganjam district. The people of Bidyadharapur and Tentulia belong to Suddha Saura tribe. Instances of interbreeding (marriages) among the people of Bidyadharapur and Tentulia have been noticed to establish the fact that, they belong to the same tribe: Suddha Saura. On the contrary, the people of Arakhapada are of Lanjia Saura tribe. Marriages have not been noticed among the people of Bidyandharapur and Arakhapada indicating the fact that, they belong to two different tribes. In between these two tribes one can witness the differences in socio-economic-cultural aspects. The dialect of Lanjia Saura is completely different from that of Sudha Saura.

The Lanjia Saura of Biripadara and Sikkarpai of Gunupur sub-division, Rayagada district speak the same dialect as that of the Lanjia Saura of Arakhapada in Ganjam district. Both of these two tribes are almost similar in socio-economic-cultural aspects. Therefore, the pattern of ABO blood groups distribution among the people of Biripadara and Sikkarpai was studied with a view to establish the fact, that the Lanjia Saura of Arakhapada are similar with that of the Lanjia Saura of Biripadara and Sikkarpai.

Random samples were collected from 91 male and female individuals from Arakhapada, 100 male and female individuals from Biripadara and Sikkarpai and 97 male and female individuals from Bidyadharpur and Tentulia. Pricking the tips of fingers, blood samples were collected and tested on the slides, in the field following the slide method (Ghai, 1988). Chi-square test was performed to know whether there is any difference in the distribution pattern of blood groups among the two tribal populations. Gene frequency of ABO blood groups distribution was calculated following Li (1961).

RESULTS AND DISCUSSION

Table 1 reveals the total number of population tested and the pattern of ABO blood groups distribution including allele frequency among Lanjia and Suddha Saura tribes. Blood group B (50.0%) is predominant followed by group O (27.5%), A (16.5%) and AB (6.5%) in Lanjia Saura, whereas group O (39.2%) is predominant followed by group A (30.9%), B (18.6%) and AB (11.3%) in Suddha Saura tribe. The percentage of blood group O, A and AB was higher in Suddha Saura than the Lanjia Saura tribe. The percentage of group B in Lanjia Saura of Arakhapada, Biripadara and Sikkarpai villages was more than two and one-half times

Table 1: Phenotype and allele frequency among Suddha Saura and Lanjia Saura in villages: Arakhapada, Bidyadharapur, Tentulia, Biripadara and Sikkarpai

Villages with districts	*Tribe*	*Sample*	*Phenotype (Number)*				*Allele frequency*		
			O	*A*	*B*	*AB*	*A*	*B*	*O*
Arakhapada (Ganjam district)	Lanjia Saura	91	25	15	45	6	0.1250	0.3424	0.5326
Bidyadharapur and Tentulia (Ganjam district)	Suddha Saura	97	38	30	18	11	0.2335	0.1581	0.6084
Biripadara and Sikkarpai (Rayagada district)	Lanjia Saura	100	28	16	50	6	0.1189	0.3426	0.5385

Note : 1. Chi-square value for the blood groups of Lanjia Saura of Arakhapada and Suddha Saura of Bidyadharapur and Tentulia = 20.63 (significant) $p < 0.001$.

2. Chi-square value for the blood groups of Lanjia Saura of Arakhapada and Lanjia Saura of Biripadara and Sikkarpai = 0.041 (Not significant)

greater than the group B of Suddha Saura of Bidyadharapur and Tentulia. On the whole percentage of blood groups, O, A, B and AB of Lanjia Saura of Arakhapada do not have any similarity with the percentage of blood groups of Suddha Saura of Bidyadharpur and Tentulia. Further, the chi-square analysis for the difference of blood groups of Lanjia Saura and Suddha Saura were found to be highly significant : (Chi-square = 20.63, df = 3, $P<0.001$), which indicated that the blood groups of the two tribes of the same district are different. Further, it was observed that the percentage of blood groups of Lanjia Saura of Arakhapada of Ganjam district and that of Biripadara and Sikkarpai of Rayagada district are similar. The chi-square analysis between the blood groups of Lanjia Saura of the two districts show that, there was no significant difference between them (Chi-square = 0.041, df = 3, $p>0.05$).

The allele frequency of the Lanjia Saura of Arakhapada (Ganjam district) is almost similar with that of the Lanjia Saura of Biripadara and Sikkarapi (Rayagada district) (Table 1). While the same of Lanjia Saura of Arakhapada (Ganjam district) is different from that of Suddha Saura of Bidyadharapur and Tentulia (Ganjam district).

CONCLUSION

The pattern of ABO blood groups distribution of Lanjia Saura of Arakhapada, is similar with that of Lanjia Saura of Biripadara and Sikkarpai; but not similar with that of Suddha Saura of Bidyadharapur and Tentulia, suggesting the fact that, the two groups: Lanjia Saura and Accultured Saura (the ancestral stock of Suddha Saura) have originated from a common ancestral stock: Saura. As the Lanjia Saura group were accustomed with hill tracts and dense forests and that of the Accultured Saura group with plains, isolation might have played a greater role in the inhibition of intermarriages among the two isolated tribes resulting the bifurcation of the common ancestral stock: Saura into Lanjia Saura and Accultured Saura in course of evolution. Later on a branch of the Accultured Saura accepted Hinduism and the other branch of the same accepted Christianity which were ultimately known as Suddha (Hinduised) Saura and Christianised Saura, respectively (Das and Patnaik, 1984-85).

In course of time, Lanjia Saura and Suddha Saura might have migrated and dispersed to different places in search of food and shelter. This may be the reason why, the blood groups distribution pattern of Arakhapada (District Ganjam) is similar with that of Lanjia Saura of Biripadara and Sikkarpai of Rayagada district though they are separated at a distance of 140 km.

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REFERENCES

Bhasin, M.K., Walter, H. and Danker Hopfe, H. : *Distribution of Genetical, Morphological and Behavioural Traits Among the Peoples of Indian Region.* Kamla-Raj Enterprises, Delhi (1992).

Das, N.C. and Patnaik, P.K. : Comparative demographic analysis between the traditional and the hinduised Saura, *Adibasi*, **XXIV**: 18-24 (1984-85).

Ghai, C.L. : ABO blood grouping (Syn : Blood typing). pp. 619-171. In : *A Text Book of Practical Physiology.* Jaypee Brother, Medical Publishers, New Delhi (1988).

Li, C.C. : Multiple alleles and blood types, pp. 45-57. In: *Human Genetics : Principles and Methods.* McGraw-Hill Book Company, New York (1961).