



## DOMINANCE PATTERNS OF CORONARY ARTERIES- A CROSS SECTIONAL STUDY OF ANGIOGRAPHY PATIENTS

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### KEYWORDS :

### INTRODUCTION

The understanding of dominance of coronary artery is important for several cardiovascular disorders. There is increased incidence of coronary heart disease in the persons with left coronary arterial dominance and co dominance heart. In left coronary dominance and codominance, the left coronary artery has to supply entire interventricular septum due to which the pulse pressure of blood rises more than 60mmHg in it producing atherosclerosis.

Coronary dominance is based on the vessel that gives rise to posterior descending artery which supplies the atrio-ventricular node. Recognized by the presence of septal perforating branches arises from the RCA in 80 % and from the LCX in 10 % of the population.

Co- dominance is found in 10 % of the population where the posterior interventricular artery is formed by both the RCA & LCX.

### METHODOLOGY

Present study was conducted at the East singhbhum at Brahmananda Narayana Multispeciality Hospital, Jamshedpur. Patients reporting to cardiology out patient department and cardiac emergency department fulfilling the inclusion criteria are selected for study. The aim of present study was done to obtain the data and to enrich the knowledge of the vascular pattern of coronary arteries, its branches and also to observe the type of coronary arterial dominance pattern in the population of Jharkhand region which can be of immense help to clinicians. Angiographic data was considered as the source of information regarding the origin of posterior descending artery.

### OBSERVATION

**Table No 1: Origin of PDA**

	Origin of PDA	Specimen	Percentage
a	RCA	79	83.1 %
b	LCA	14	14.7%
c	Both	2	2.2%
Total		95	100%

It is observed that out of 95 specimens studied, the PDA originated from RCA in 79 (83.1%) cases, in 14 (14.7%) cases PDA originated from LCA, in 2 (2.2%) cases PDA originated from both RCA and LCA.

### DISCUSSION

The dominance of coronary artery is determined by the posterior interventricular/descending artery (PDA). It is termed as right dominance if PDA is a branch of RCA, left dominance if PDA is a branch of LCA and co dominant if PDA is given by both by RCA and LCA.

The incidence of right coronary arterial dominance in present study (83%) is similar compared to that reported by Jose Roberto Ortale et al (88%), MA El Sayed (80%), Vasudeva Reddy J et al (86.25%).

The incidence of right coronary arterial dominance (83.1%), left coronary arterial dominance (14.7%) and codominance (2.2%) obtained in the present study are similar with findings of Vasudeva Reddy J et al.

The incidence of 60.5% and 42% right coronary arterial dominance as reported by Fazlul Aziz Mian et al and Fazliogullari Z et al respectively is lower when compared with our study. Whereas the incidence of left coronary arterial dominance (19.5%) and codominance (20%) reported by Fazlul Aziz Mian et al was higher when compared to the present study.

**Table No 2: Showing comparison of origin of PDA**

Authors	Population	Origin of PDA		
		RCA (%)	LCA (%)	BOTH (%)
Hussein Ali Fakhir et al	Iraq	76%	13%	11%
Fazliogullari Z et al	Turkey	42%	14%	44%
Fazlul Aziz Mian et al	Pakistan	60.5%	19.5%	20%
Jose Roberto Ortale et al	Brazil	88%	8%	4%
MA El Sayed	Egypt	80%	10%	10%
Hirak Das et al	Assam	70%	18.5%	11.5%
Vasudeva Reddy J et al	South India	86.25%	11.25%	2.5%
Present Study	Jharkhand	83.1%	14.7%	2.2%

The incidence of left coronary arterial dominance in present study was 14.7% as compared to 18.5% reported by Hirak Das et al, 11.5% by Vasudeva Reddy J et al, 10% by MA El Sayed, 8% by Jose Roberto Ortale et al. The variation in result could be due to racial and geographical variation.

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