

# INCIDENCE OF ACCESSORY RENAL ARTERIES IN VARIED HUMAN POPULATIONS AND IT'S EFFECTS ON THE HAEMODYNAMICS OF THE RENAL VASCULATURE: A LITERATURE REVIEW



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## INTRODUCTION

The accessory renal artery (ARA) is a vestigial anatomical structure that is formed during the ascent of the kidney from the pelvis to the lumbar region. They are found in 30% of the individuals. The origin of these arteries are variable. However, presence of these arteries in humankind have significant clinical implications and therefore, the study of its variability in human populations become extremely crucial.

## DISCUSSION

Under normal circumstances, kidneys are supplied by the primary renal arteries that originate from the abdominal aorta. However, it has been observed that a notable percentage of individuals possess the ARAs and it varies between different ethnic groups.

The prevalence of these arteries can range from 4% in Malaysia to 61.5% in Brazil. A lower frequency has been reported in East and South Asia, from 4% to 18.4%.

The complexity of population dynamics, including migration and ethnic diversity, affects the study of results of studies of ARAs.

One study included 400 Sudanese participants and renal arterial variations were found in 44 participants, out of which 24 participants possessed the renal collateral arteries (30%).

There was no significant association between the presence of ARAs and gender and the data obtained was statistically insignificant with a  $p > 0.05$ .

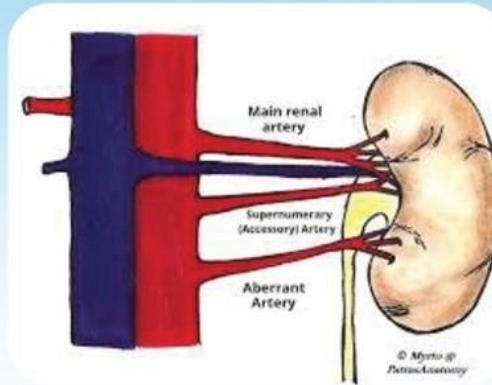


Fig 1: Demonstration of the Renal Vasculature

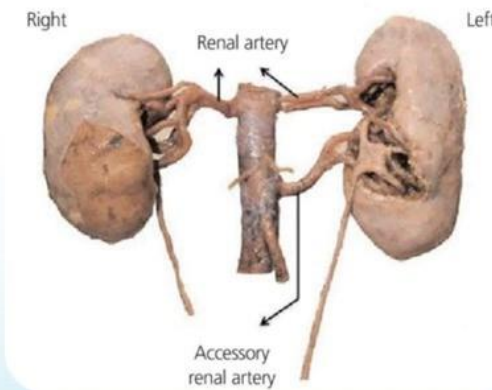
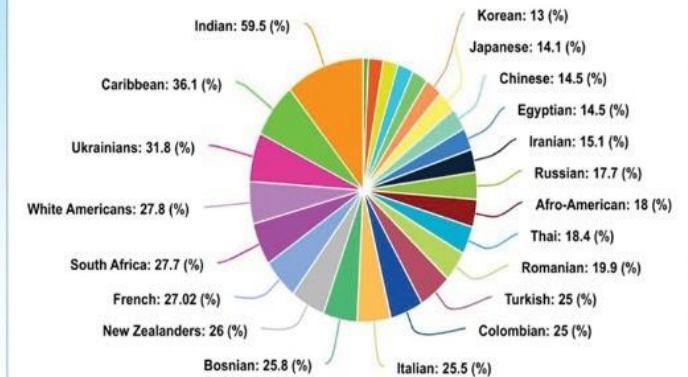


Fig 2: Malrotated kidney with an ARA on the left side

## RESULTS



## CLINICAL IMPLICATIONS

Because of the complex nature of renal embryogenesis, there are various changes in the renal tubule. ARAs with "external" angiogenesis act as end-functioning, non-anastomosing tissue carrying vessels. Thus, injury or inhibition of these ARAs, which act as disease barriers, may directly lead to renal parenchymal disease.

If the accessory renal artery originates from the inferior mesenteric artery, it may cross in front of the ureter leading to the kidney. Therefore, ureteral obstruction and hydronephrosis may occur.

## REFERENCES

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