

## ROLE OF ILIUM IN SEXUAL DIMORPHISM OF HIP BONE: A MORPHOMETRIC STUDY IN NORTH INDIAN POPULATION

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### ABSTRACT

**Introduction:** Sex estimation of skeletal remains is an important issue in both forensics and bioarchaeology. Many mammalian species display sexual dimorphism in the pelvis, where females possess larger dimensions of the obstetric canal than males. This is contrary to the general pattern of body size dimorphism, where males are larger than females. Pelvic dimorphism is often attributed to selection relating to parturition, or as a developmental consequence of secondary sexual differentiation. Current opinion regards the hip bone as the most reliable sex indicator because it is the most dimorphic bone, particularly in adult individuals.

**Material & Methods:** In the present study, an attempt has been made to find the base line data of thirteen parameters pertaining to ilia of 100 hip bones of known sex and side. Variables studied were: Total length of iliac crest, lengths of its ventral & dorsal segments; distance between Anterior Superior Iliac Spine & Iliac Tubercle; Iliac height; Ventral, Sacral, Direct, Lower & Upper iliac heights; Iliac breadth; Lower, Ventral & Sacral iliac breadths, Length of pelvic & sacral parts of Chilotic Line.

**Results:** The results obtained were tabulated, statistically analysed & compared to the earlier literature. It was seen that almost all the parameters except Sacral Iliac Height, Lower Iliac Height & Pelvic parts of Chilotic line were longer in males.

**Conclusion:** To conclude, the morphometry of ilium also constitutes an important mean of sexual dimorphism. However its parameters are longer in males as it does not form a part of birth canal so is independent of sex hormones & is akin to general rule that male bones are larger than female bones.

**KEYWORDS :** Sexual dimorphism, Hip bone, Ilium, sex determination, North Indian.

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### INTRODUCTION

In skeletal remains, the sex determination by forensic anthropologists or bio archaeologists typically relies on the analysis of quantitative and qualitative characteristics of the skeleton. In this regard, the most widely used features belong to the pelvic and cranial areas [1]. The nature and

degree of sexual differentiation in the pelvis has long been of interest to anatomists and anthropologists. It is of practical importance to of skeleton, in case of pelvic girdle, additional sex differentiating features are considered because of the reproductive functions mainly influenced by the sex hormones [4].