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A PROSPECTIVE, OBSERVATIONAL STUDY OF  
THE RELATIONSHIP BETWEEN LUMBAR  
EPIDURAL SPACE DEPTH AND BODY MASS  
INDEX IN MALAYSIAN PARTURIENTS

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# **ABSTRACT**

## **Introduction**

Epidural have been around for long time, but it only became widely used for pain relief in labour once the suitable local anaesthetic, called bupivacaine became available.

Epidural anesthesia is occasionally difficult in pregnant patients due to obesity and edema [1,2,3,4,6] that frequently obscure anatomical landmarks, increasing the incidence of failure. Additionally, during pregnancy, the hormonal changes can affect the tissue consistency resulting in false loss of resistance.

## **Background**

The purpose of this study was to determine if there is a correlation between BMI and the depth of epidural space in Malaysian parturients who had labour epidural. The study's findings can be used to better anticipate, foresee the possibilities of difficult and high risk labour epidural.

## **Methods**

This is a prospective, observational study. After ethics committee approval, 400 pregnant women in labor who requested for lumbar epidural analgesia for labor were included in the study. Epidural space was identified by a midline approach at the Lumbar intervertebral space using a loss of resistance technique with 0.9% saline or air. Data collected included: race, height, weight, body mass index (BMI), depth of the epidural space and number of attempts. The depth of the epidural space was defined as the

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## **Introduction**

Epidural anaesthesia is a central neuraxial block technique with many applications. The epidural space was first described by Corning in 1901, and Fidel Pages first used epidural anaesthesia in humans in 1921. In 1945 Tuohy introduced the needle which is still most commonly used for epidural anaesthesia. Improvements in equipment, drugs and technique have made it a popular and versatile anaesthetic technique, with applications in surgery, obstetrics and pain control. Both single injection and catheter techniques can be used. Its versatility means it can be used as an anaesthetic, as an analgesic adjuvant to general anaesthesia, and for postoperative analgesia in procedures involving the lower limbs, perineum, pelvis, abdomen and thorax.



Epidural set

There is no denying that labour is a painful process but epidural analgesia can provide complete freedom from pain throughout labour. Currently, about one in four women choose to have an epidural in labour in the United Kingdom.