COMPARITIVE STUDY OF SPRING-LOADED SYRINGE WITH GLASS SYRINGE USING LOSS OF RESISTANCE TECHNIQUE WITH SALINE FOR IDENTIFICATION OF EPIDURAL SPACE IN LUMBAR EPIDURALS

ABSTRACT

BACKGROUND AND AIMS:

Episure™ AutoDetect™ syringe (EAS), a spring-loaded syringe, is a new loss-of resistance (LOR) syringe with an internal compression spring that applies constant pressure on the plunger used to identify epidural space. We compared the performance of EAS with that of glass syringe when used to identify epidural space using LOR technique with saline for lumbar epidurals.

METHOD:

A total of 120 patients of age between 18 – 60 years, ASA I-II undergoing abdominal and lower limb surgeries and need post-operative epidural analgesia were included and randomized into 2 groups Group EAS and Group GS with 60 patients in each group. Group EAS receive Lumbar Epidurals with EAS & Group GS with Glass syringe. Patient demographic data, Depth to epidural space (cm), Number of attempts, Time to locate epidural space (sec), Inadvertent dural

puncture, Ease of catheter placement, Intravascular catheter placement & Failed epidural analgesia are the parameters noted.

RESULTS:

There were no differences in patient demographics. There was slight difference in depth to the epidural space between the two groups. There were six failed blocks requiring catheter replacement in the glass syringe group and none in the EAS group (P 0.027). Similarly, there were six inadvertent dural punctures in the glass syringe group and none in the EAS group (P 0.027). When ES was identified in one attempt, the time needed to identify epidural space was quicker with EAS (P <0.001).

CONCLUSION:

Using Episure AutoDetect spring-loaded syringe has allowed reliable and quick identification of the epidural space in lumbar epidural. There were no inadvertent dural punctures or failed blocks with the EAS in this study. It is also a best learning tool in the hands of Anaesthetic residents.