The Potential of Accuro Technology for Epidural and Spinal Anaesthesia in Irish Hospital Settings

M. Kumar ¹, S. Lal², Z. Memon¹

1. Our Lady of Lourdes, Hospital, Drogheda, Ireland.
2. Beaumont Hospital, Dublin 9, Ireland.

Dear Editor,

Conventional ultrasound-guided spinal and epidural anaesthesia techniques have limitations that can hinder their effectiveness compared to newer technologies such as Accuro. These limitations include operator skill dependence, limited visualization, increased complication rates, and longer procedure time.¹

The Accuro is a handheld, touch screen display ultrasound device, a promising new technology that can guide needle placement during epidural or spinal anaesthesia procedures. SpineNav3D technology helps to automated spinal bone landmark detection and depth measurements, the device can help healthcare providers accurately place the needle in the correct location, resulting in improved success rates, reduced number of needle passes required, and increased patient safety. The National Institute for Health and Care Excellence (NICE) has recognized the potential of Accuro to improve the safety and efficiency of epidural and spinal anaesthesia procedures, but more evidence is needed to establish its long-term benefits and cost-effectiveness.²

Our hospital recently integrated Accuro to guide needle placement during epidural and spinal anaesthesia procedures. We have found it to be a valuable tool in improving the accuracy and safety of these procedures, which aligns with the findings of recent studies demonstrating its potential to enhance patient outcomes.

Based on these studies, Accuro may benefit certain patient populations, including obese pregnant women undergoing spinal anaesthesia for caesarean section and orthopaedic patients with obesity. Accuro has also been found to be accurate for identifying the epidural space in pregnant women. However, there is limited evidence on the effectiveness of Accuro for patients with scoliosis or limited spine mobility. More research is needed to determine the generalizability and effectiveness of Accuro for these patient populations.

We recommend the incorporation of Accuro for epidural and spinal anaesthesia procedures in other healthcare facilities for several reasons.
Firstly, Accuro has demonstrated a higher success rate for identifying the epidural space compared to traditional ultrasound-guided methods. This superior performance reduces the number of needle passes required and lessens patient discomfort. Secondly, Accuro can minimize the risk of complications, such as accidental dural puncture, by providing real-time 3D imaging of the epidural space. This feature enhances safety during the procedure and reduces the risk of adverse outcomes. Thirdly, Accuro can enhance the patient experience during epidural and spinal anaesthesia procedures. By reducing the number of needle passes required for successful placement, Accuro minimizes patient discomfort and anxiety, leading to improved patient satisfaction. Fourthly, Accuro can boost healthcare providers’ confidence by providing precise and intuitive guidance for needle placement, reducing the learning curve and enhancing overall performance. This factor can increase provider satisfaction and improve patient outcomes. Finally, Accuro can be used in a broader range of patient populations, resulting in a greater success rate of the procedure and a decreased risk of complications. This aspect offers significant advantages compared to traditional ultrasound-guided methods, which may be less effective in certain patient populations. However, potential barriers to using Accuro in Ireland, such as cost, limited availability, operator training and resistance to change, will require collaboration among healthcare providers, hospitals, and policymakers to ensure patients have access to innovative technologies for epidural and spinal anaesthesia procedures.

We recommend the implementation of Accuro in Irish healthcare settings for epidural and spinal anaesthesia procedures due to its potential to improve patient outcomes, enhance healthcare providers’ confidence, and improve the overall experience of these procedures.

**Declarations of conflict of interest:**
None declared.

**Corresponding author:**
Mahendar Kumar
Specialist registrar
Our Lady of Lourdes Hospital,
Drogheda,
Ireland.
E-Mail: mahendar.daswani@yahoo.com

**References:**
1. Delforche J, VANDERHAEGHEN S, Coppens M. How effective is an ultrasound-based imaging technique with automated guidance as an aid in performing spinal anesthesia in

