Pediatric Regional Anaesthesia Database: UK.

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Introduction;

The unique geographical distribution of the UK and Ireland, with a large number of tertiary centres for paediatric analgesia close together, allows the undertaking of audits which can answer the big questions in paediatric regional analgesia. *Are epidural infusion analgesia or morphine infusion analgesia safe in children?*

Methods;

In the UK and Ireland a group of healthcare professionals, both medical and nursing meet once a year to discuss the main topics of interest to them in paediatric analgesia. One topic which for which there was no satisfactory answer was; what do I tell parents when they ask me about the incidence of severe side effects with epidural infusion analgesia(EIA). The group thus undertook to answer this question, and the National Epidural Audit was born. 21 centres were enrolled, the determining factors being the presence of a pain nurse for paediatric pain management, and the use of EIA. Each month centres would send a set of data comprising of EIA usage, broken down into insertion site and age of patient. If there was a critical incident, a more complete set of data would be obtained, and the patient would be followed for one year after the incident. A specific set of complications was determined and stratified into grades of severity

Results;

Data was obtained for 10633 EIA episodes

There were 96 reported severe incidents,56 were due to epidural analgesia. There were 5 grade 1 incidents (5,10000).There were nine grade 2. Only one child had severe incident 1 year after audit. The number of epidurals performed each year was relatively constant. Larger hospitals where more EIA took place was associated with a lower incidence of complications. Caudal infusion analgesia was associated with a lower incidence of complications. Neonates were associated with a higher incidence of complications, however this was related to EIA management rather than mechanical problems. There was no increase in risk related to drug used or grade of operator.

Other points which were raised by the audit included;

Infections occurred despite all accepted sterile precautions, but were all related to prolonged infusion rates

Total spinal analgesia occurred after multiple attempts at insertion

Compartment syndrome was never masked by EIA

There were 350 infusions in neonates, with only 1 related to technical failure

There were almost 3500 thoracic epidurals inserted with the patient asleep without consequence

Discussion.

This audit has demonstrated the advantage of multicentre, large scale audits. We are the largest users of EIA in the UK, yet it would have taken us 28 years to have accumulated as much data as this audit did in 5.

The obvious question which followed, was how safe is morphine infusion analgesia in comparison, thus the same group is now undertaking an audit to look exactly at this. There are 18 centres completing data on type of morphine infusion and age stratified to age.

In our own centre audits such as this have been able to demonstrate risk factors for requirement for postoperative intensive care patients undergoing oesophageal atresia repairs and closure of gastroschisis. In these patients use of EIA has been shown to remove the requirement for admission to Intensive Care.

The future

Can multicentre audits work, if the centres are in different countries, then *yes* is the answer, as shown by the audit of neonatal anaesthesia versus spinal anaesthesia currently taking place in the UK, Australia and USA. There is no reason why we cannot do the same multicentre multisite audits in the UK and USA looking at analgesia