Title of Presentation: PIERRE LIMOGES LECTURE: Safety in Pediatric Regional Anesthesia

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Learning Objectives:

Following the lecture the participant will have:

i. A clear understanding of the risks and benefits of regional anesthesia in children evolved over the past two decades.
ii. Techniques available to further improve safety based on current evidence will be proposed
iii. The participant will be able to decide on the choice of adjuvants for both neuraxial and peripheral nerve blocks based on current evidence.

Background:

Multicenter surveys and audits (ADARPEF, UK and PRAN) combined with meta-analyses over the past two decades have given us an insight into the risks involved in the increasing popular use of regional anesthesia in children. Ultrasound guidance, the use of test doses and appropriate sterile technique may reduce some of the risks.

Quality improvement in the form of simulation, appropriate teaching and workshops remain a challenge.

Major Teaching Points:

Based on multicentre surveys over the past decade regional anesthesia in children is relatively safe with an overall incidence of minor or treatable complications of ~1:1000.

The advent of ultrasound guidance has enhanced our ability to perform peripheral nerve that carry an even lower risk

Adjuvants increase the duration of analgesia and allow lower concentrations of local anesthetic to be used neuraxially. The value of adjuvants in peripheral nerve blocks is undetermined. Ultimately the choice should be based on efficacy and side effect profile.

Continuous infusions of LA can also be used to prolong analgesia but carry a low risk of infection. Preparation with chlorhexidine or tunneling the catheter may reduce this risk.

Potential Clinical Implications:

Improve safety and reduce risk when regional anesthesia is use in neonates infants and children

Future Areas of Research:

Evaluate the protective effect of regional anesthesia on neurotoxicity or negative neurocognitive effects of general anaesthesia

Evaluate the duration of analgesia of an appropriate peripheral nerve block compared to the use of a neuraxial adjuvant.

To determine the most effective method of teaching regional anesthesia – simulation, workshops, or clinical!

Key References / Further Reading: