Questions & Answers
Friday 4 December 2020

PROSA2020 WEBINAR SERIES

Questions for Mark Roback

1. In the Netherlands we already do 0 hours clear fluids. you don't do this in USA?

   Essentially no. ASA guidelines for elective sedation are 2 hours for clear liquids (slide #7).

2. No patient representative in ICAPS?

   Sedation experts. Patient representation is a good idea.

3. Do you advise a special fasting scheme for patients with gastroparesis (delayed gastric emptying)?

   Patients with delayed gastric emptying time presumably have increased risk, although this condition is not specifically addressed in the literature. No special fasting scheme but a factor to consider.

4. Is clear liquid also a water ice?

   I would consider ice water to be a clear liquid.

5. Do you support the evolution that in addition to shortening the fastening time the dosage of perioperative glucose is lowered?

   While this makes sense, I cannot speak for how best to administer pre- general anesthesia IV fluids. For procedural sedation, pre-sedation IV fluids are not required. Procedures are generally much shorter.

6. We see in our hospital that following the shortening of the fastening times the iv glucose concentration solution used during anesthesia is reduced to 2.5 %. Do you support this evolution?

   Same as #5 I think.

7. How can I convince my anesthesiologist to change our practice to go for a non-fasting rule for our elective procedures?

   This is a very important question. Although Sedation outside the OR is a multidisciplinary specialty with a robust supporting medical literature, in most hospitals, Anesthesia plays the primary leadership role. My approach since the mid-1990's is to join the Hospital Sedation Committee and do everything I can to partner with our Anesthesia colleagues. This has worked quite well. Find the Anesthesiologist who cares the most about sedation outside the OR (many do not perform much "sedation") and work with her/him. It is a process that requires time, patience and collaboration. Best of luck!

   - **One suggestion: I would avoid the term "non-fasting rule". This makes many people very uncomfortable. I would start with something like "fasting rules that best meet the needs of our patients and are supported by the medical literature as being safe and effective". Something like that.**

Questions & Answers
Friday 4 December 2020

PROSA2020 WEBINAR SERIES

Questions for Giorgio Cozzi

1. Is dex suitable for extremely anxious children or with severe mental disability?

   Dex is suitable for children in a sleepy mood and not very anxious. Commonly, very anxious children are difficult to approach, with an intranasal or intravenous administration of sedatives. So that, first of all, you should question the real necessity of performing the procedure in that moment and eventually postpone the procedure, try to understand why the child is so anxious, consider previous experiences and the mood of parents. If the procedure really urgent and non-pharmacological techniques are working I think that deep sedation should be considered. In general, dex is suitable as sedative for children with mental disability, if cardiological comorbidities are not present and there are no contraindications to the use of dex. In particular, we have some preliminary experience of the use of dex in children with severe mental disability in case of a severe sleep disorder.

2. I have a question about which and how long monitoring is necessary after IN dex?

   Even if sedation with dex is similar to natural sleep, the evidence shows that adverse events are possible. Therefore, I suggest to monitor the child at least with a pulse-oximetry until the complete recover from sedation.

3. You said dex is exclusive to OR but most research was done on radiology applications. Explain please.

   I'm sorry for the misunderstanding. The use of dex has been extensively studied in children outside the operating room. My entire presentation was focused on studies performed outside the OR setting.

4. Are there any antidotes?

   To my knowledge, no antidotes are available for dex.

5. What's the age of the patient population for dex?

   Dex has been employed in children of any age. Most of them are younger than 5-6 years of age, but dex can be used also in older children who are not able to cooperate during a procedure. Preliminary data are available also for the use of intranasal dex in newborn patients outside the OR. In my Institute, neonatologists use intrasasal dex in newborn needing MRI as a routine.

6. Did you observe a significant increased risk for AE with Dex combined with Midazolam in comparison with Midazolam or Dex administered as monodrug?

   Yes, we have found a mild increase of episodes of desaturation. In our published series of children sedated with the combination of intranasal dex and oral midazolam we had a 5% of children with desaturation.

7. How do you organize the logistics of an MRI program with variable time of onset, 66-100% success percentage and variable mostly long-lasting after sleep?

   In my opinion, in the MRI setting, intranasal dex alone has not a satisfactory rate of success. There is a trial comparing 3mcg/kg dex and 4mcg/kg dex for MRI and the best rate of success was 70% (in the 4mcg/kg group) (Tug et al Ped Drugs 2015). In my Institute we use the combination of intranasal dex and oral midazolam and with this combination a rescue is needed in near 15% of cases. In the MRI setting, intravenous dex has a higher rate of success and should be considered.

8. Those neonates with IN drugs for MRI: what are the fasting rules for the little ones?

   To date, we follow the fasting guidelines also for neonates with IN dex.

9. When using Dexmed, how do you monitor the patient (Tc. O2? Heart and respiration rate? Blood pressure?), and for how long after completing the session?

   Usually we monitor patients with pulse-oximetry and capnography. Checking the blood pressure during procedure may disturb the sleep, so that we check the blood pressure before and after the exam. We monitor patients until complete recover from sedation.

10. Our sedation team works with the group of anesthesia and they insist on keeping the kids NPO for IN DEx sedation.... I want to change that... what can I use to convince them? Any suggestion?

    Intranasal dexmedetomidine has not a rate of 100% percent. Therefore, for elective procedures, my suggestion is also to consider the possible need for a rescue sedative (ketamine, propofol?). NPO status should be consider for this reason. On the other hand, to share with anesthesiologists the evidence on fasting and adverse events in the emergency setting could be useful.

11. I have a question about which and how long monitoring is necessary after IN dex. That means you need a doctor next to the patient waiting for his/her MRI, and hour before, and until he comes back in the ward. As their are only technical nurses or child life specialist at this place. Which means easily 2h?

    I think that children should be monitored during sleep as commonly performed with other sedatives and they should be checked by trained operators.

Questions & Answers
Friday 4 December 2020

PROSA2020 WEBINAR SERIES

Questions for Piet Leroy

1. What are the age boundaries for using NO inhalation?

   Depends on the child and its level of cooperation. But in general children beyond the age of 3-4 years are perfect candidates. Below 3 mask acceptance can be an issue that needs premedication (as shown in the video).
   Older children (> 12 year), in our experience, may have problems with losing control or feelings of embarrassment ('how will I behave')

2. What is the maximal volume that a two year nose can absorb before it turns into oral administration?

   Most probably about 0,3 ml per nostril per dose.

3. Why not use dexmed in painful procedures?

   You can use dexmed to achieve minimal sedation prior to a (minor) painful procedure (e.g needle procedure) as an alternative for e.g. midazolam of Nitrous Oxide. Dexmed on its own has no relevant analgesic effects. So using topical anesthesia is crucial. In addition: during a dexmed sedation, patients are sleeping naturally deeply, but can wake up if sensory stimuli are too high. Working conditions should therefore be quiet and calm!

4. Is the mix 50 % n2o - 50 % O2?

   Yes.

5. We have problems to examine the ears inside on ORL. It is sometimes painful, but sometimes the doctor is not allowed to watch. What can we use for these 10 min examination? And children can go home after the procedure?

   This is a very relevant question on a topic that has not been studies thoroughly in literature. Of course you will find papers reporting the use of oral chloral hydrate or midazolam, but in general they lack comprehensive outcome data. Furthermore, the extremely long half-life time + sometimes deep sedative effects of CH and the relatively unpredictable effects of Midazolam (including risk of excitation and 'drunk' behavior) make both sedatives less suitable. A small study with nitrous oxide has been published about 15 yrs ago: https://pubmed.ncbi.nlm.nih.gov/15763288/ . Also in our experience nitrous oxide (with or without Intranasal fentanyl if pain is anticpated) might be really useful in these situations. Be aware that Nitrous creates expansion of the middle ear air chamber. This might cause pain especially in children with otitis media. Consider pretreatment with Intranasal xylomethazoline.
   In order to answer this question, more options than sedation should be considered: (1) is the examination really needed…. (2) Post-procedural care: ORL procedures are often very short but distressing. In. Many cases immediate post-procedural care intending to re-focus attention will be very successful. (3) triage system: preselect very anxious children or any situation in which substantial distress might be expected. Refer them for sedation or (in cases of autism, developmental delay, no way to achieve collaboration) consider even anesthesia.

6. You seem to search a real sleep for quite long procedure with environmental measures, is it your first aim? Pharmacological measure in second position?

   In our way of working non-pharmacology always precedes pharmacology. Even in deep sedation with Propofol, we focus on establishing trust as the essential primer for induction. As such, non-pharmacology and pharmacology strategies are complementary and eachothers alternatives. Of course, in many setting non-pharmacology techniques will be sufficient to reach the goal of procedural comfort.

7. What about N2O and aerosolization in nowdays COVID19 era? Do you test children for COVID19 before sedation?

   If patients are free of symptoms, we do not test them.

8. What can we use for the examination of the ears (or cleaning them by the doctor)?

   See my answer above.

9. When using a combination of nasal dexmed and ketamine, what is an appropriate timing, dosage and route of ketamine?

   We don't use them in this combination. But based on literature it seems reasonable to give them at the same time: dexmed sedation after a dose of 4 mcg/kg is maximum more or ess 20-30 min after administration. The analgesic effects of IN Ketamine (1,5-2 mg/kg racemic ketamine) seems to be max after 30 min as well). A drawback of this method is the high fluid load in the nose.

10. Isn't it stinging a lot, dex intranasal?

    No it does not sting!

Questions & Answers
Friday 4 December 2020

PROSA2020 WEBINAR SERIES

Questions for All

1. In halifax we use chloral hydrate currently. What is the difference in effectiveness between chloral and dex?

   Giorgio Cozzi: **The available trials that compared intranasal dex and oral chloral hydrate for sedation outside the OR, have demonstrated that intranasal dex was superior to chloral hydrate both in terms of efficacy and adverse events. For more details, I suggest two reviews: Cozzi G. et al. Intranasal dexmedetomidine for procedural sedation in children, a suitable alternative to chloral hydrate. Ped Drugs 2017. Poonai N. et al. Intranasal dexmedetomidine for procedural distress in children: a systematic review. Pediatrics 2020.**

2. Would you use dexmed for placing a nasogastric tube or a pHmetry? Would you do the same for esophageal manometry in a child you are suspecting of esophageal achalasia?

   Giorgio Cozzi: **Dexmedetomidine has only mild analgesic properties and usually children wake up with stimulation. I don't have any direct experience of its use for this kind of procedures.**

   Piet Leroy: **NG tube placement is overall a very distressing procedure, especially if a child is resisting. Dexmed is unlikely to be effective, in my opinion, but I am not aware of any studies. Regarding pH metry: consider whether this intervention is really needed. According to recent guidelines, pH metry is hardly ever needed…. See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5958910/**