Reviewer’s report

Title: Efficacy of premedication with intranasal dexmedetomidine for removal of inhaled foreign bodies in children by flexible fiberoptic bronchoscopy: a randomized, double-blind, placebo-controlled clinical trial

Version: 0 Date: 26 Apr 2019

Reviewer: Massimiliano Sorbello

Reviewer's report:

Paper from Yanmei and coworkers covers the interesting topic of pediatric procedural sedation for inhaled foreign body removal using dexmedetomidine, a new sedative agent.

TITLE

It could be misleading as it is; at least "premedication" should be added, otherwise it might seem that dexmedetomidine is the only agent used.

The paper premises are someway misleading: there is no debate weather flexible or rigid bronchoscopy is better for inhaled foreign body removal, especially in pediatric patient. Flexible bronchoscopy is a precious tool for diagnosis, especially of radio-transparent foreign bodies, and it might allow also their removal, providing an adequate ventilation is maintained (i.e. through a supraglottic device). Nevertheless, due to small fiberoptic caliber allowed in pediatric patients, sometimes the same aspiration is challenging, and size of operative tools (forceps, canister..) sometimes is too large to be used in (small diameter) scopes. Thus, rigid bronchoscopy Cannot be substituted for these procedures, particularly considering that it also allows oxygenation (Jet).

So, definitively, I would not consider as a comparison between two alternative techniques, but rather as two complementary tools for a really challenging procedure.

During the removal procedure, it is also extremely important to induce adequate reflexes blunting, due to high risk of airway lesions (especially if a rigid scope is used) and my personal experience is that dexmedetomidine alone might not be enough to allow the procedure safely. Foreign body removal is a totally different practice if compared with diagnostic flexible endoscopy (time, duration, respiratory status, possible complications..). If, as in the research from Yanmei, it is combined with sevoflurane, probably small (reduced) doses of opioid analgesic could be considered.
fetal (?) fatal

completely true, but this also depends on anesthetic depth and on use of opioids as reflex-blunting medications

I can't see the benefit of dexmedetomidine not inducing respiratory depression, ventilation granted by LMA. Different centers do use neuromuscular blocking agents for this procedure.

"...bronchoscopy for foreign body removal"

How was the 1 mcg/kg dose defined? Line 271 does not seem to report adequate explanation. Other papers report higher doses ranging (2 to 3 mcg/kg):


CO2 is measured by capnography, not EtSevo. Authors are probably referring to sidestream sampling, probably infrared adsorption technology.

Size of used fiberoptic scope and LMAs should be reported.

Removal means of foreign body should also be noticed, and similarly time-lag between diagnosis and retrieval of foreign body, as time lag might severely influence complications and outcome due to different airway reactivity and inflammation.

How many patients received extra medication? i.e. remifentanil or propofol? Was also cortisone or other medication administered? Authors mention acetylcysteine line 245.

Also the choice for anesthetic gas vs intravenous propofol as anesthesia maintenance technique for inhaled foreign body removal should be discussed, due to literature controversial and evidence.

On which endpoints or difference was power analysis calculated? 20 patients per study arm are a limited number of cases.

How do you explain differences in reactions, movements, hemodynamic parameters, spontaneous breath between two groups given a non-significant BIS value difference?
Line 219 principle -&gt; principal

Line 242 precious  previous

Line 255: unclear. Difference in RR was then due to (relatively) higher Sevoflurane concentration in group C or because of dexmedetomidine apnea-sparing effect in group D?

Line 283: what is meaning for bilateral bronchus?

Table 5, unclear: what is "extubation time"?

references need to be updated.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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