[SO1-134] Outcome of a sedation/analgesia/local anesthesia protocol for pediatric flexible bronchoscopy: A single-centre experience over three years in a developing country.

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Background:
Most centres in developed countries perform pediatric bronchoscopy under general anesthesia. However, operating room facilities are often unavailable in resource-limited settings that have to balance efficacy and safety using sedation/analgesia/ local anesthesia protocols.

Objective:
This paper describes a single-centre experience in north India, where pediatric flexible bronchoscopy is performed using a standard protocol for sedation, analgesia and local anesthesia.

Methods:
As per the institution protocol, pediatric flexible bronchoscopies are performed with parental written, informed consent. A standard sedation/analgesia protocol is used comprising (i)oral triclofos 50mg/kg 30min prior to the procedure, (ii)Midazolam 0.1mg/kg iv bolus and (iii)Morphine 0.1mg/kg iv bolus, immediately prior to the procedure. Local anesthesia protocol involves (i)2 drops of 1.0% Lignocaine in one nostril, and (ii)nebulization with 0.5ml 1% Lignocaine plus 2.5 ml 0.9% saline 10 minutes prior to the procedure; (iii)0.5ml 1.0% Lignocaine through the bronchoscope at the vocal cords, and (iv)1.0 ml 1.0% Lignocaine at the carina. The above protocol was evaluated in all consecutive procedures over a three-year period with respect to (i)time to sedation (defined as MOASS1 score2), (ii)duration of sedation (defined as duration from MOASS score 2 to 4), (iii)ratio of sedation-duration to procedure-duration, (iv)failure of sedation (defined as failure to achieve MOASS1 score2 with need for additional dose and/or medications), (v)oxygen saturation nadir, (vi)cough during the procedure, (vii)procedure analgesia defined by post-procedure demand for pain relief, (viii)amnesia (verbal self-report), (ix)complications during the procedure, (x)post-procedure complications.

Results:
A total of 529 procedures were performed over 36 months. The mean age of children was 6.5+4.8years, and gender ratio (M:F=1.4:1.0). All procedures were performed for diagnostic indications. A summary of outcomes is presented in Table 1.

Conclusions:
The sedation/analgesia/local anesthesia protocol for pediatric flexible bronchoscopy used in our centre is safe and efficacious. It permits the procedure without need for general anesthesia, thereby is time and resource efficient. However, the protocol is sub-optimal for amnesia.

References:
1. Chernik DA, Gillings D, Laine H, Hendler J, Silver JM, Davidson AB, Schwam EM, Siegel JL. Validity and reliability of the Observer's Assessment of Alertness/Sedation Scale: study with intravenous midazolam. J Clin Psychopharmacol. 1990; 10: 244–251.

Table 1: Outcome of sedation/analgesia/local anesthesia protocol

Parameter	Mean±s.d
Time to sedation (min)	1.8±1.7
Duration of sedation (min)	10.3±14.5
Ratio of sedation-duration to procedure-duration	2.1±1.8
Failure of sedation	33/529(6.2%)
Failure of sedation despite additional dose of Midazolam	11/33
Failure of sedation despite additional dose of morphine	2/11
Transcutaneous oxygen saturation nadir(%)	96.5±3.2
Cough during the procedure (brief episode)	23/529(4.3%)
Cough during the procedure (severe episode/s requiring deferment of procedure)	9/529(1.7%)
Post-procedure demand for pain relief	19/433(4.4%)
Amnesia (among children ≥5 years)	158/363(43.5%)
Complications during the procedure*	13/529(2.4%)
Post-procedure complications**	3/529(0.06%)

*Respiratory arrest requiring administration of naloxone(1), desaturation <90% for >30 seconds(2).

**Pneumothorax (1; in a child with disseminated Staphylococcal sepsis), chest pain (1; resolved after 4h with no intervention), hemoptysis (1 episode; subsided within 24h with no intervention)