Intranasal Sufentanil/Ketamine Analgesia

- *Treatment of pediatric procedural pain*

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Introduction

Acute procedural pain in children is associated with a variety of medical procedures.

Off-label use of analgesics and sedatives for treatment of procedural pain is common.

Advantages of intranasal drug administration for treatment of procedural pain, includes

- **Needle-free administration**
- **Easy to administer**
- **Rapid onset of effect**
- **No hepatic first-pass metabolism**

Photo from http://www.newcastle-hospitals.org.uk/services/accident-emergency_childrens-emergency-department.aspx

Objectives

To investigate the safety and effect of intranasal sufentanil and intranasal s-ketamine in a free dosage combination used for treatment of procedural pain in routine clinical care .

Methods

Data collection:

- Data were collected for the period 2004-2015 (preliminary data from 5 years are presented).
- Data from electronic patient records (routine clinical care).
- Protocol-based data collection sheets were used.

Patients:

- Children 1-18 years.
- Treatment of procedural pain in an ambulatory setting at Astrid Lindgren Children's Hospital, Stockholm, Sweden.
- Receiving a free combination of intranasal sufentanil and intranasal s-ketamine.
- Intranasal sufentanil and s-ketamine were titrated to effect.

Results

- 285 medical procedures with intranasal sufentanil and intranasal s-ketamine in combination were performed during a five-year period.

Patient characteristics	
Age: median (range)	5 (1.0-17.5)
Type of medical procedures, n (%)	
Burn dressing changes	109 (38%)
Botox injections	165 (58%)
Others	10 (4%)
Drug doses: median (range)	
Intranasal sufentanil (mcg/kg)	0.5 (0.2-1.3)
Intranasal s-ketamine (mg/kg)	0.5 (0.2-5.0)
Concomitant medication, n (%)	
Nitrous oxide (max. 50%)	154 (54%)
Medical procedure performed: n (%)	
Successfully	278 (98%)
Unsuccessfully	7 (2%)

Table 1 Patients characteristics. *Nitrous oxide (max. 50%) was administrated as concomitant medication for the medical procedure "Botox injection".

Adverse events	
Medical procedures with reported adverse events, n (%)	45 (16%)
Type of adverse event, n (%)	
Nausea and/or vomiting	34 (12%)
Dizziness	5 (1.8%)
Agitation/paradoxical reaction	3 (1.0%)
Nasal irritation	3 (1.0%)
Visual disturbance/abnormal dreams	2 (0.7%)

Table 2 Adverse events reported for the 285 medical procedures performed with intranasal sufentanil and s-ketamine in combination during a five year period.

Conclusion

No safety concerns were raised from the preliminary data analysis.

Intranasal sufentanil and s-ketamine in combination may be safely administered for treatment of procedural pain in an ambulatory setting.