Materials and Methods: We performed a prospective, observational study of fourteen ASA physical status I-II children, scheduled for elective office-based surgery. The I-gel ® was placed under general anaesthesia according to the manufacturer's recommendations. Correct ventilation was evaluated by proper chest excursion, a square wave capnogram, absence of audible leak and gastric distension. The oropharyngeal sealing pressure was measured at fresh gas flow of 5 $L.min^{-1}$, and pressure adjustment valve at 30 cmH_2O with the head and neck in neutral, flexed, extended and rotated positions. The fiberoptic laryngeal views in these positions were also assessed.

Results and Discussion: In our study, the sealing pressure with the I-gel ® device was lower in the *extended* and the *rotated* positions, than that in the *neutral* position. Sealing pressure was increased in the *flexed* position. These findings were explained during the fiberoptic examination of the laryngeal inlet. The vocal cords were more easily seen in extension and rotation. Neck *extension* facilitated airway patency by increasing the laryngeal inlet space. Head *rotation* widened the oropharyngeal space, as it had a component of extension. Additionally, this position preserved to a great degree the adaptation of the ventilation hole of the I-gel® to the laryngeal inlet due to a simultaneous rotation of the neck and the supraglottic device. The *flexed* position narrowed the laryngeal inlet, but was not associated with airway obstruction since the epiglottis was not enclosed or down folded in the cuff.

Sealing pressure at five different head and neck positions

Position	Sealing Pressure (cmH_2O)
Neutral	23, 7 ± 5, 2
Flexed	27, 0 ± 5, 3
Extended	20, 1 ± 5, 3
Rotated to the right	20, 7 ± 3, 9
Rotated to the left	21, 5 ± 3, 8

Conclusion(s): Adjustment of the head and neck position often allows optimizing poor ventilation with supraglottic devices. This preliminary study suggests that the I-gel ® is a reliable airway device at five different head and neck positions in the paediatric population. Its position undergoes a small modification in the rotated position. This is of particular interest for the paediatric anaesthesiologists, since many of the anaesthetic techniques involve the realization of caudal neuroaxial block with the child in the lateral decubitus position.

10AP1-9

The perfomance of the pediatric-sized i-gel™ compared with the Ambu Aura Once™ laryngeal mask in anesthetized and ventilated children

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Background and Goal of Study: The pediatric i-gel (Intersurgical Ltd, Wokingham, Berkshire, UK) is an adjusted adult i-gel. It features a gastric channel down to size 1.5. The Ambu Aura Once (Ambu A/S, Ballerup, Denmark) is a precurved laryngeal mask widely used in pediatrics. The aim of this prospective randomized controlled clinical trial is to compare the performance of both masks in anesthetized children. We assumed that both devices have equal insertion time and airway seal pressure.

Materials and Methods: With IRB approval and informed consent we included 86 of the planned total of 200 children of both genders, aged 0-17 years, 5-50kg, ASA physical status I-II, scheduled at the University Hospital of Bern for elective surgery under general anesthesia. Anesthesia was induced with sevoflurane or propofol. Time to insert the device was measured from the time the face mask was taken away until sufficient ventilation was established. We also evaluated fiberoptic view through the masks and adverse events.

Results and Discussion: Demographic data did not differ between groups (age 7±4years, p=0.945, weight 26±12kg, p=0.669, ASA physical status, p=0.589). Male:female ratio was 63:23 and equal between the groups (p=0.465). Both devices were equally used in all subgroups (<10kg, 10-14.9kg, 15-19.9kg, 20-29.9kg, 30-50kg). In 19 of the 43 i-gels, the device had to be pushed down to maintain sufficient airway leak pressure especially in smaller children. In 1 Ambu, the patient developed bronchospasm, which was quickly resolved by deepening the anesthesia level. In 1 case, the i-gel was removed and reinserted to treat the onset of a new leak. There were no major side effects.

Supraglottic Mask Performance

	Ambu Aura Once (n=43)	i-gel (n=43)	p-value
Success n (%)	41 (95)	41 (95)	1.000
Insertion time until successful ventilation (sec)	22 ± 9	28 ± 13	0.020
Airway Leak Pressure (cm H2O)	19 ± 4	23 ± 5	<0.001
Fiberoptic view grade 1/ 2/ 3/ 4* n (%)	37/1/1/0 (94/3/3/0)	40/3/0/0 (93/7/0/0)	0.382

* 1=full view of glottic aperture, 2=partial view, 3=only epiglottis visible, 4=no glottic structures visible

Conclusion(s): The pediatric-sized i-gel is suitable for ventilation of anesthetized children and offers the additional advantage of gastric access. Compared to the Ambu Aura Once, it shows higher airway leak pressures. However, especially in very small children, the i-gel has the tendency to protrude outwards and often needs to be taped down with light force.

10AP1-10

Comparison of intranasal dexmedetomidine and midazolam for premedication in children

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Background and Goal of Study: Premedication plays a very important role to minimize the distress for children in the operating room and to facilitate a smooth induction of anaesthesia (1). Midazolam is the most commonly used premedication in children (2). Dexmedetomidine is a new alpha-2 agonist with a more selective action on the alpha-2 adrenoceptor and a shorter half-life. In our study; we aimed to evaluate whether intranasal dexmedetomidine is as effective as intranazal midazolam for premedication in pre-school children.

Materials and Methods: This clinical study was designed as a prospective randomized controlled trial. After the approval of Ethics Committee of Sisli Etfal Training and Research Hospital and informed consent of the parents, 60 patients aged 2-6 years in ASA I-II physical status were enrolled the study. Standart monitorization including heart rate(HR) and peripheral O_2 saturation (SpO_2) was applied to all patients in Premedication Unit and patients were randomized into two groups as to receive 0.5 µg/kg intranasal dexmetedomidine in Group D or 0.5 mg/kg intranasal midazolam in Group M. Sedation score, HR and SpO_2 were recorded before drug administration (basal=0.min), at 10.min after administration and with 5 min intervals until 30.min. Parental seperation at 30.min and mask tolerance at the anaesthesia induction were also evaluated. Student t, Mann Whitney U, Wilcoxon, chi square tests were used for the statistical analyses. P<0.05 considered as significant.

Results and Discussion: Sedation score was significantly higher in Group D compared to Group M at 15.min(p<0.05). When compared to 10.min sedation score values were significantly lower at all intervals in Group D and Group M (p<0.05). Parental seperation score was significantly higher (p<0.05) and mask tolerance at anaesthesia induction score was significantly lower (p<0.01) in Group D compared to Group M. HR and SpO_2 were comparable between the groups. HR values were significantly higher in Group D than Group M at all intervals except basal values (p<0.05). SpO_2 were comparable between the groups.

Conclusion(s): We conclude that; intranazal 0.5 µg/kg dexmedetomidine can be an alternative to intranasal 0.5 mg/kg midazolam when used for premedication in pre-school children.

References:

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10AP1-11

Parental presence in the operating room makes inhalational anaesthesia smoother in children

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Background and Goal of Study: Inhalational anaesthesia induction is safe and worlwide used in paediatric anaesthesia because it avoids awake venous access. However this is not the only stressful situation fot the children in the perioperative period: the separation from their parents can be a moment of maximum anxiety and may hinder the inhalational anaesthesia induction. The