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Research Article

THE MEDICAL SUITABILITY OF THREE DIFFERENT SEDATION CONVENTIONS IN ADOLESCENTS EXPECTED TO RECEIVE DENTAL TREATMENT

¹Dr. Syeda Fizza Batool, ²Dr. Hafiza Saman Manzoor, ³Dr Murtaza

¹Rural Health Center Maghian, Attock

² University Medical n Dental College Madina University

³Baqai Dental College, Baqai Medical University, Karachi

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Abstract:

Aim: The aim of the currently planned randomized preliminary investigation was to assess the medical suitability of three different sedation conventions in adolescents expected to receive dental treatment.

Methods: Our current research was conducted at Services Hospital Lahore from March 2017 to April 2018. Seventy-eight ASA-I patients were randomly selected from 7-year-old adolescents who had a high level of discomfort and were randomly divided into four meetings: ketamine-treated collection - received a base portion of 1 mg/kg, drawn from a non-stop mix portion of 56-68 µg/kg/min, propofol-treated collection (Bund P) - received a base portion of 4 mg/kg, drawn from a constant imbuement portion of 76-93 µg/kg/min, and ketamine in addition to propofol-treated collection (Bund KP) - received a base portion of 0.6 mg/kg followed by a consistent implantation rate of 46-66 µg/kg/min. During the study period, significant indications of children such as clockwork, sedation level with the BIS screen and the time periods needed for complete recovery were recorded. The degree of varying nervousness was estimated using the Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) and the Modified Child Dental Anxiety Scale facial presentation.

Results: A higher rate of discomfort was observed in the ketamine-treated collection ($p < 0.05$). The mean recovery time was also factually longer for the ketamine-treated collection ($p < 0.05$). We found comparable relationships between BIS estimates and sedation levels in both KP and P collections. Conversely, there was no relationship between BIS and sedation levels in the ketamine-healed collection. The discomfort of the adolescents in the assemblies treated with Propofol and Ketofol was lower overall compared to the assemblies cured with Ketamine ($p < 0.05$).

Conclusion: In both three different sedation conventions, no real entanglement was discernible during the study period. We found that treatment with ketamine in addition to propofol was associated with fewer entanglements and higher fees for dental treatment in pediatric patients.

Key words: ZA children's dental anxiety; MCDAS, Intravenous sedation; Ketofol; Ketamine.

Corresponding author:

Dr Syeda Fizza Batool,

Rural Health Center Maghian, Attock

QR code



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INTRODUCTION:

Dental nervousness and fright are a typical wonder that causes treatment problems for both the dentist and patients, especially children. Oost Eisbahn et al. found that dental nervousness came in fourth place after fear of snakes, fear of statures and severe damage [1]. The frequency of dental tensions and discomforts varies between 7% and 54% depending on the type of assessment technique used, the population, society and nation that benefit [2]. Age, a woman's sexual orientation, the horrible experience of eating or dental care, education level and family financial class are some of the variables that stand out as risk factors for dental stress. Technical sedation for the dental treatment of children provides a sheltered and pleasant state with a decrease in discomfort [3]. Similarly, intravenous sedation using consolidated narcotics, such as midazolam, ketamine, propofol and fentanyl, provides varying degrees of sedation among sedatives that are aware of it and those that are not. The mixture of propofol and ketamine is a generally new and promising sedation choice with reduced respiratory and hemodynamic complexities. It is recognized that a unique pharmacological property of these two mixtures reduces the symptoms between them and thus allows a pleasant and safe sedation [4]. As part of this review, we studied the effects of four different sedation strategies, such as ketamine alone, propofol alone and ketamine in addition to propofol, on youth nervousness. The clinical viability of these techniques was also assessed using BIS verification, researcher vigilance/sedation assessment and Ramsay sedation scales [5].

METHODOLOGY:

Our current research was conducted at Services Hospital Lahore from March 2017 to April 2018. Seventy-eight ASA-I patients were randomly selected from 7-year-old adolescents who had a high level of discomfort and were randomly divided into four meetings: ketamine-treated collection - received a base portion of 1 mg/kg, drawn from a non-stop mix portion of 56-68 $\mu\text{g}/\text{kg}/\text{min}$, propofol-treated collection (Bund P) - received a base portion of 4 mg/kg, drawn from a constant imbuement portion of 76-93 $\mu\text{g}/\text{kg}/\text{min}$, and ketamine in addition to propofol-treated collection (Bund KP) - received a base portion of 0.6 mg/kg followed by a consistent implantation rate of 46-66 $\mu\text{g}/\text{kg}/\text{min}$. During the study period, significant indications of children such as clockwork, sedation level with the BIS screen and the time periods needed for complete recovery were recorded. All patients had neglected to initiate dental treatment regardless of conduct directing strategies. Sound people with no psychological or engine inability, no sedation/full

anesthesia history, and requiring in any event two sessions of dental cures remained enlisted. Patients were randomized by passing the shut envelope strategy to one of the three examination gatherings; Group K: (n = 28) Cases got IV-ketamine. 4 ml ketamine weakened with ordinary saline answer for a complete volume of 23 ml; 1 mg/kg bolus portion pursued by 53-64 $\mu\text{g}/\text{kg}/\text{min}$ consistent imbuement by means of implantation gadget.

Group P: (n = 28) Patients got IV-propofol (all out volume 23 ml, 3 mg/kg bolus portion, trailed by 75-95 $\mu\text{g}/\text{kg}/\text{min}$ ceaseless mixture through an implantation gadget. Gathering KP: (n = 28) A 1:1 blend was set up with 210 mg propofol in mix with 200 mg ketamine (4 ml). Cases got 0.7 mg/kg bolus portion pursued by 45-65 $\mu\text{g}/\text{kg}/\text{min}$ nonstop mixture through an implantation gadget. Prilocaine cream was applied to kids' hands 1 hour before cannulation. The preoperatively nervousness level of the patients was estimated with the facial form of changed Child Dental Anxiety Scale and the Children's Fear Survey Schedule - Dental Subscale. So as to explore the financial and instructive degree of the guardians, all guardians finished a poll.

Measurable investigation: To accomplish a distinction level of in any event 1.9 qualities with 86% certainty interim (CI) and 6% alpha blunder (0.06) between two gatherings regarding variations in CFSS-DS esteems in preoperatively time against postoperatively time, researchers chose that base example size in every gathering must be at any rate 24 patients. Preoperative versus postoperative CFSSDS and MCDAS values were looked at by matched t-test. Sexual orientation, financial status, instructive degree of guardians, fulfillment paces of anesthesiologist and dental specialist, inconvenience rates remained assessed with Chi square or Fisher's exact Chi square tests. Pearson connection investigation was utilized for relationships between BIS esteems and OAAS/RSS, likewise among preoperatively CFSS-DS, MCDAS and different limitations. $p < 0.06$ was measured factually critical.

RESULTS:

There are no significant contrasts between the gatherings in terms of statistical information ($p > 0.06$). The normal values of CFSS-DS and MCDAS after dental treatment in group P and collection KP remained fundamentally lower than those of group K ($p = 0.001$, $p = 0.024$ and $p = 0.005$; $p = 0.036$) (Table 1). Mean estimates of CFSS-DS and MCDASf for young women were generally higher in the preoperative period than for young men ($p = 0.049$; $p = 0.01$). We found a negative relationship between patient age and preoperative esteem of CFSS-DS, while no relationship was established between CFSS-DS, education level and family

financial status ($r = -0.652$; $p < 0.0001$, $p > 0.05$). Comparable results were obtained for the preoperative MCDASf scores and the age, education and monetary status of the tutors ($r = -0.735$; $p <$

0.0001 and $p > 0.05$, separately). The researchers found a strong positive relationship between CFSS-DS and preoperative MCDASf values ($r = 0.794$; $p < 0.0001$).

Table 1: Assessment of pre and postoperative CFSS-DS, MCDASf scores:

| Scale | Set-27 | Set-p | Set-pk | p |
|-----------------------|----------------|------------------|------------------|-------|
| CFSS-DS preoperative | + 39,36 ± 6,30 | 32,60 ± 6,92*, + | 34,40 ± 5,62*, + | 0.001 |
| CFSS-DS postoperative | 30.32 ± 5,60 | 31,76 ± 5,62 | 29,32 ± 7,38 | 0.388 |
| MCDASf preoperative | 29,60 ± 5,55 | 23,68 ± 5,67*, + | 25,04 ± 7,15* | 0.003 |
| MCDASf postoperative | 40.12 ± 6,37 | 41,32 ± 7,41 | 39,56 ± 6,17 | 0.638 |

Significant parameters:

Average systolic blood vessel pressure besides DBP vessel pressure afterward medication organization in bunch P and gathering KP stayed fundamentally lower than in bunch K ($p < 0.0002$ and $p < 0.06$ consistently) (Table 2). Furthermore, the normal SAP and DAP values in bunch P were altogether lower at 5 working minutes than those deliberate in bunch KP ($p < 0.0002$ and $p = 0.014$).

Table 2: Contrast of BIS values [Mean ± SD]

| Time | Set-27 | Set-p | Set-pk | p |
|----------|------------------|----------------|-----------------|----------|
| 0 min | 87.76 ± 5.46+ | 69.40 ± 4.12*+ | 74.84 ± 2.10*&+ | < 0.0002 |
| 5th min | *+ 87.60 ± 4.55+ | 66.76 ± 4.47 | 76.24 ± 2.28*&+ | < 0.0001 |
| 10th min | *+ 89.74 ± 5.38 | 68.10 ± 3.53 | 77.10 ± 2.36*&+ | < 0.0002 |
| 20th min | 96.32 ± 1.91 | 97.28 ± 1.10 | 97.20 ± 1.69 | 0.066 |

Sedation levels and BIS scores:

The average BIS esteems at record-breaking focuses after medication organization in bunch P and KP stayed fundamentally lower than in bunch K ($p < 0.0002$, unequalled focuses). Likewise, the mean BIS esteems were essentially lower in bunch P than in bunch KP consistently after medication organization ($p < 0.0002$, all occasions). Mean Ramsay sedation scale (RSS) values in bunch P consistently - aside from 26 minutes were essentially lower than those in bunch K ($p < 0.0003$; $p = 0.003$; $p < 0.0003$; $p < 0.0003$; $p < 0.0002$; $p < 0.0002$) - with the exception of 26 minutes, while in bunch KP mean RSS values on 11, 16, and 21 minutes were altogether lower than those in bunch K ($p = 0.004$; $p = 0.003$; $p = 0.008$). We found a critical contrast among the normal RSS values in bunch KP and gathering P just at the hour of intercession ($p = 0.008$). Researchers found a negative relationship amongst RSS and BIS esteems consistently in bunch P and gathering KP after organization of medications, though no connection was found in bunch K. The contrast among RSS and BIS esteems was just seen at the hour of mediation ($p = 0.008$). The inconvenience rates in bunch P and gathering KP were fundamentally inferior than in bunch K ($p < 0.0002$; $p < 0.0002$). The difficulty rates were comparative in bunch P and gathering KP ($p = 0.482$) (Table 3).

Table 3. Period of intervention. recovery / satisfaction rates of parents. dentists and anesthesiologists:

| Variable | Set-27 | Set-p | Set-pk | p |
|---|--------------|---------------|--------------|-------------------------------------|
| Duration of recovery (min) | 19.44 ± 5.48 | 11.96 ± 2.32* | 9.72 ± 3.41* | < 0.0001 |
| Duration of intervention (min) | 23.24 ± 4.24 | 22.64 ± 3.83 | 21.36 ± 4.27 | 0.26 |
| Dentist (Very satisfied/satisfied/dis satisfied) | 1/21/3 | 24/1/0*& | 4/15/6 | X ² = 63.572 < 0.0001 |
| Anesthesiologist (Very satisfied/satisfied/dis satisfied) | 4/17/4 | 24/1/0*& | 4/15/6 | X ² = 51.053 < 0.0002 |

DISCUSSION:

Past investigations have indicated a decreased symptom profile and entanglement rates with ketamine-propofol mixes contrasted with any single compound [6]. There is no agreement on explicit

proportions of ketamine-propofol blends, in any case, a few investigations indicated that blends in proportions of 1:1 were identified with lower respiratory sorrow with relating hemodynamic reactions contrasted with proportions of 4:2 and

3:2.27-29. Dental tension is broad in kids and the announced occurrence changes somewhere in the range of 7% and 53%. 12-15 Dental uneasiness in kids can influence future visits to the dental specialist and can hence prompt poor dental and oral cleanliness. We chose a 1:1 blend and a bolus portion of 0.7 mg/kg, trailed by 45-65 µg/kg/min persistent implantation convention, that remained beforehand adequately utilized by Dabbaiss *et al.* with an imbue portion of 100 µg/kg/min [7]. The general danger of propofol in infusion torment was around 76% and different reports recommend decreased torment in mix with ketamine. In our investigation, none of the cases in Set K and Set KP had infusion torment, whereas in Group P we discovered infusion torment in 8% of the cases [8]. We clarify this outcome with the preventive impact of ketamine on the arrival of torment middle people. We additionally applied prilocaine cream to the dorsum of the hands 1 hour before cannulation and this safeguard may lessen force of conceivable infusion torment [9]. We recommend that few components, including higher confusion paces of fantasies, sickness, retching and delayed recuperation after ketamine, were seen after treatment with ketamine. Sedation, fundamentally influence parent fulfillment. Then again, an increasingly agreeable and more secure condition with Ketofol prompts a higher fulfillment of dental specialist and anesthetist. Ketofol actuates an abbreviated recovery time, which was accounted for in youngsters somewhere in the range of 7.4 and 24 minutes. Notwithstanding, longer recuperation times, for example, 28-107 min for ketamine sedation and 9-95 min for propofol remained accounted for [10].

CONCLUSION:

Finally, researchers can express that Propofol and Ketofol allow successful sedation without real perioperative complexities during dental treatment of children. In any case, ketofol can be used safely due to gradually stable cardiovascular hemodynamics, a lower symptom profile, shorter recovery time than ketamine alone, higher physician satisfaction rates and lower blood pressure levels among 8-15 year old who have received dental treatment.

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