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Contemporary Sedation Training in Advanced Pediatric Dentistry Programs: Shortcomings and Unrealistic Expectations

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Editorial

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Abstract

If asked to describe the extent to which pediatric dental residents and postgraduate students experience successful outcomes when using oral sedation, their responses are correspondingly low, unimpressive if not surprising. This editorial focuses on the basis of such outcomes and suggests needed updates in sedation curricula and clinical applications.

Editorial

If a deficiency and weakness exists within the teaching curriculum of advanced training programs in pediatric dentistry it falls in the realm of the proficient and effective utilization of pediatric oral sedation. Over the course of the last twenty years, considerable time and effort has been expended to explore what works and what's safe when comparing the efficacy of various sedation agents and dosing. Much of the literature has been of survey and retrospective format. Only a paucity of well -designed prospective studies has been forthcoming. As result, but a few training programs report impressive and consistent outcomes; when interviewed, both faculty and postgraduates readily confess to a prevalence of failed outcomes and analysis of the reasons for such appear to stem from grossly inadequate agent and / or dosage selection. Reticence to make use of mid to upper range dosing to avoid potential mishaps appears to prevail from the perspective and comfort levels of program directors. Sedation protocols generally are the collaborative efforts of Program Directors and institutional review to determine what constitutes safe use of available agents to maintain consciousness while obtunding interfering patient movement.

In some instances, state regulatory agencies have intervened to constrain what agents are acceptable for institutional formularies. Agents such as chloral hydrate (meperidine, and ketamine) have been removed from the sedation arsenal of a large percentage of training programs. In any case, protection of the public is foremost for all involved in protocol and policy decisions. That said, the experience and expertise, comprehensive proficiency in airway management and the recognition of a developing respiratory and cardiovascular problem prevail in the use of sedative techniques for managing challenging and disruptive patient behaviours.

Complicating factors include inconsistency of faculty inexperience and unfamiliarity with both classical and contemporary literature. Those lacking in this arena appear to prevail in instances where morbidity and mortality has been reported. Use of inappropriate agents and dosing, use of excessive and toxic doses of local anesthetics, negligent patient monitoring and non-compliance with published safety guidelines , inclusive of failing to fulfill discharge criteria are among the most frequently cited etiologies of

recurring mishaps and catastrophic outcomes. Considerable literature has been presented which articulates examples of shortcomings and poor clinician judgment responsible for otherwise preventable outcomes. Excessive dosing, irrational agent selection, inadequate proficiency in recognition and timely management of a developing medical problem are cited as causative factors. Inadequate success in achieving desired levels of sedation, alternatively result from the use of sub - therapeutic dosing.

Travels of this author to numerous pediatric programs for lectures on sedation practices since 1988 to both hospital-based and academic institutions have identified both a diverse and highly limited use of agents. Dosing protocols have been similarly diverse, if not alarmingly bizarre. Hypothetically, it has appeared almost universal that recognition of failure in sedation outcomes is met with increased reliance on physical restraint (often referred to as "protective stabilization") to overcome the shortcomings of inadequate sedation. In theory one might reasonably expect programs to reach the conclusion that adjustments in agent and dosage selection were warranted after experiencing extensive and repeated need for adjunctive restraint.

Responses from residents have given strong acknowledgment and indication that the need for persistent use of restraint served to provide justification for the use of general anesthesia. The frequency of success when using oral sedation has been reported to range from 10-50% when using midazolam at 0.3-0.5mg/kg. In contrast, clinicians making routine use of 0.7-1.0 mg/kg and those combining midazolam with meperidine (0.5-1.5 mg/kg) have reported success rates of 70-90% with no incidence of adverse consequences.

Numerous retrospective papers looking at considerable data of variable dosing of a diverse range of agents and dosing for varying levels of challenging behaviors have appeared.

It seems logical that if failure frequently results when attempting to use non-therapeutic dosing, re-assessment of a programs agent and dosing protocol is warranted. Parental approval and consent for the use of physical restraint appears to be waning.

Despite the existence of comprehensive efforts to define safe guidelines for the elective use of sedative techniques mishaps are reported. Few states have been successful in establishing and implementing compliance measures that guarantee guidelines are followed.

These challenges appear to remain for the ADA Council on Dental Accreditation with respect to sedation curricula and institutional and state fulfillment. To date, while an adequate number of sedation experiences of residents and postgraduate students have been suggested for advanced training programs, no mechanisms appear to yet be in place to assure their uniformity and compliance. Institutional and private practice recommendations have been made to establish protocols for timely reinforcement of emergency mock training drills. Individual states while interested to establish such norms are first to admit to limitations in manpower availability to implement such policies. The AAPD appears committed to spearhead energies to address these shortcomings and deficiencies.