ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 6, Issue – 3, May - 2023, Page No. : 106 – 111

Management of patients with autism spectrum disorders in India - A public health perspective

[1]C Sai Prafulla, BDS, Goregaon Dental Centre

[2]Naval Ghule, BDS, Goregaon Dental Centre

[3]Amar Shaw, MDS Public Health Dentistry, Goregaon Dental Centre

Corresponding Author: C Sai Prafulla, BDS, Goregaon Dental Centre

Citation of this Article: C Sai Prafulla, Naval Ghule, Amar Shaw, "Management of patients with autism spectrum disorders in India - A public health perspective", IJDSIR- May - 2023, Volume – 6, Issue - 3, P. No. 106 – 111.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Autism spectrum disorders, or ASD, are an umbrella term commonly used to describe several developmental disorders in which individuals have substantial differences in the nature of their social development and communication skills, as well as unusual behaviours and interests.

This disorder needs the administration of multiple medications to help the affected person participate effectively in the educational and rehabilitative process. Dentists treating the children with autism must be familiar with the manifestations of the disease and its associated features so that they can provide the highest level of patient cooperation.

This article provides a guide towards the dental management for patients with Autism spectrum disorders. Dental professional must also be familiar with the drugs used to treat the disorder because many of them cause unpleasant oral and systemic side effects. Learning about autism will help dentist provide better care and make the visit to the dental clinic a better experience for everyone.

Keywords: Autistic Disorder, Developmental Disorder, Dental Management, Research, India

Introduction

The autism spectrum disorders (ASD) was first described in 1943 by the American child psychologist, Leo Kanner. This disorder is a pervasive developmental disorder defined behaviourally as a syndrome consisting of abnormal development of social skills (withdrawal, lack of interest in peers), limitations in the use of interactive language (speech as well as nonverbal communication), and sensorimotor deficits (inconsistent responses to environmentalstimuli)[1,2,3].

It is more common in the paediatric population than are some better known disorders such as diabetes, spinal bifida, or Down syndrome. Prevalence studies have been done in several states including United Kingdom, Europe, and Asia. Prevalence estimates range from two to six per 1,000 children. The wide range of prevalence points to a need for earlier and more accurate screening for the symptoms of ASD[4,5]. The earlier the disorder is

diagnosed, the sooner the child can be helped through treatment interventions.

The aetiology of ASD is a mystery. Highly regarded researchers are of the opinion that there is probably more than one cause since the disorder can have such disparate manifestations.

Genetics, environmental poisons, neurologic psychopathy, dietary deficiencies, and allergies have all been implicated. Pervasive developmental disorders, Asperger's syndrome, Rett syndrome, and childhood degenerative disorders are all considered a part of the ASD group, but the distinction between the various entities is not always clear. Some theories are that children with autism have abnormal levels of serotonin or other neurotransmitters in the brain effect normal development[4,5].

Possible contributing factors in the development of autism include infections, errors in metabolism, immunology, lead poisoning, and foetal alcohol syndrome[6] .

Given the fact that the aetiology and the increased incidence of the various ASDs are scientifically puzzling, treatment modalities tend to be wide ranging and very much trial and error, especially since there is no cure[7].

Dental professionals who treat patients with ASDs should be knowledgeable about the special needs of not only these patients, but also of their parents. All children with ASD demonstrate deficits in: a) Social interaction, b) Verbal and nonverbal communication, and c) Repetitive behaviours or interests.

In addition, they will often have unusual responses to sensory experiences, such as certain sounds or the way objects look. Each of these symptoms runs the gamut from mild to severe. Each child will display communication, social, and behavioural patterns that are individual but fit into the overall diagnosis of ASD[4,5,7].

People with autism experience few unusual oral health conditions. Although commonly used medications and damaging oral habits can cause problems, the rates of caries and periodontal disease in people with autism are comparable to those in the general population. Communication and behavioural problems pose the most significant challenges in providing oral care[8]. This review article provides a guide towards the dental treatment considerations forASD patients.

Although the treatment for autistic disorders is mostly behavioural therapies, medications are often prescribed to treat some of the symptoms of autism. These include antidepressants, antipsychotic, anticonvulsant and CNS stimulant drugs. Many of these drugs have systemic and oral side effects and need to be addressed during the dental appointment. Antipsychotic medications may cause motor disturbances that affect speech and swallowing and cause xerostomia as well as orthostatic hypotension.

Antidepressants have a myriad of side effects that include dysgeusia, stomatitis and glossitis. One commonly prescribed medication, Fluoxetine, causes sucking, lip-smacking and tongue protrusion, making oral hygiene difficult for both patient and dental hygienist. Long-term use of the anticonvulsant medications often prescribed may lead to an increase in bleeding due to either leukopenia and thrombocytopenia, or anaemia disorders. Methylphenidate specifically may lead to tachycardia or a hypertensive episode if local anaesthesia with vasoconstrictors isadministered[9,10,11]

Oral Manifestations and its dental treatment

Harmful oral habits are common which consist of bruxism; tongue thrusting. Bruxism or forceful grinding of teeth is one of the sleep problems commonly observed in children with autism. Dentist can recommend a mouth guard to stop the self-injurious behaviour. Even though

the communication and behavioural problems in children with autism pose challenges for the dentist, treatment with proper planning and a lot of patience can definitely make a difference[12].

Dental caries risk enhances in patients who eat soft, sticky, or sweet foods; damaging oral habits; and difficulty brushing and flossing. Rajic and Dzingalasevic (1989) reported that a combined treatment, provided by a dental team and a pedo-psychiatric team working together, resulted in a decreased prevalence of caries in a group of children with autism as compared to another group who did not receive any treatment[13].

In 2008 Loo CY et al., have demonstrated that the patients with ASD were more likely to be caries-free and have lower decayed, missing and filled teeth (DMFT) scores than controls[14].

Dentist should recommend preventive measures such as topical fluorides and sealants and advise the patients or their caretakers about medicines that reduce saliva or contain sugar. Additionally, doctor must recommend patients to drink plenty of water, take sugar-free medicines and rinse the mouth with water after taking any drug. Apart from this, dentist must discourage the patient on usage of cariogenic foods and beverages, and convince them to maintain daily oral hygiene. Moreover, dentists should perform hands-on demonstrations to show patients the best way to clean their teeth if they find that patients are not following the specific procedure. Some patients cannot brush and floss independently, hence the doctor need to advice the caretakers or parents about daily oral hygiene[15,16,17].

Periodontal disease happens in people with autism in much the same way it does in persons without developmental disabilities. Previous studies have shown that the child with autism have shown poorer oral hygiene and increased periodontal disease. It is well known that good oral hygiene, particularly tooth brushing with fluoride toothpaste, is also important for keeping the teeth free from caries[18,19].

Maintaining good oral hygiene in children with autism is a significant task for both the parents or carers of the child, and dental staff[19,20].

Even dentist needs to prescribe antimicrobial agent such as chlorhexidine for their daily use and also explain them the importance of conscientious oral hygiene and frequent prophylaxis[15,16,20].

Tooth eruption may be delayed due to phenytoin-induced gingival hyperplasia. Phenytoin is commonly prescribed for people with autism[16,20].

Trauma and injury to the mouth from falls or accidents happen in patient with seizure disorders. Dentist should emphasize to caregivers that traumas require immediate professional attention and explain the procedures to follow if a permanent tooth is knocked out[18,19,20].

Besides, train parents to locate any missing pieces of a fractured tooth and also highlight the parents that the chest x-ray of the patient's chest may be necessary if any fragments have been aspirated. Physical abuse is reported more frequently in people with developmental disabilities than in the general population, therefore proper education is warranted to overcome this problem[21,22].

Rade RE (2010) has found that autistic patients have allergies, immune system problems, gastrointestinal disturbances and seizures. The dentist must be aware of these comorbid conditions so that they can give optimal care to the children with autism spectrum disorders. Besides, paediatric dentist needs to have in-depth Knowledge and understanding of behavioural principles when they are dealing with ASD patients[24].

The dentist also needs to consider the following aspects before treating the ASD patients; understand the sensory

needs of the child with ASD, use of motivating games, give rewards, discuss with caretakers in advance and use of behaviour modification techniques in an autistic child having self-injurious behavior[25].

However, adults with autism demonstrate increased independence by developing skills through a structured teaching[26] or visual teaching[27] model, such models can be used to introduce children with autism to dentistry. Comprehensive dental treatment under general anaesthesia may be required 30 percent of the time[28]. In a 10-year follow-up, patients resisted efforts to establish personal contact with the dental staff. Furthermore, sedative techniques were ineffective because of atypical response patterns. Use of general anaesthesia was the only solution to provide necessary dental care[29].

When dental needs are great and attempts at behaviour modification are unsuccessful, general anaesthesia in the operating room creates a controlled environment where care is delivered efficiently and effectively[30]. Dentist must be familiar with the medications used to treat the associated features of the disorder because many of them cause inconvenient orofacial and systemic reactions and may precipitate adverse interactions with dental curative agents.

Conclusions

Given the high prevalence of children with autism, it is very likely pediatric dentists will have one or more of these children in their practice for many years. As a dentist, one needs to show compassion and provide optimum care for the patients and their families. Besides, Dentists treating the people with autism must be well versed with the manifestations of the disorder and its connected features so that they can acquire the maximum level of patient cooperation. Educating patients and their caretakers and modifying those plans to continually meet their needs are critical to the success of the patient with autism in obtaining optimal oral hygiene. Therefore, an oral health program that emphasizes prevention is considered of particular significance for children and young people with autism.

References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4th ed. Washington, DC: American Psychiatric Association, 1994:65–78.
2. World Health Organization. ICD-10: international statistical classification of diseases and related health problems. Geneva: World Health Organization, 1992.
3. Prater CD, Zylstra RG. Autism: A medical primer. American Family Physician 2002;66: 1667-74.
4. Jayachandra S. Autism spectrum disorders (ASD): Guide to Educators and Parents. Medical Education Online 2004.
5. Jayachandra S. Is secretin effective in the treatment of autism spectrum disorders? International Journal of Psychiatry in Medicine 2005; 35(1):99-101.
6. Farber JM. Autism and other communication disorders. In: Capute AJ, Accardo PJ, eds. Developmental disabilities in infancy and childhood. 2d ed. Baltimore, Md.: Brookes, 1996:347–64.
7. Berman MH. Autistic spectrum disorder: the challenge for dentists. Dentistry Today. 2010 ;29(10):96-8.
8. Jayachandra S. Need for Emphasis on Internet based scoring system for Autism Treatment Evaluation. Journal of Autism and Developmental Disorders 2005;35(5):684.
9. Filipek PA, Accardo PJ, Baranek GT, et.al. The screening and diagnosis of autism spectrum disorders. Journal of Autism and Developmental Disorders, 1999; 29(2): 439-84

10. Friedlander AH, Yagiela JA, Paterno VI, Mahler ME. The neuropathology, medical management and dental implications of autism. Journal of American Dental Association2006; 137: 1517-27.

11. Ming, X., Brimacombe, M., Chaaban, J., Zimmerman-Bier, B., Wagner, G. C. Autism Spectrum Disorders: Concurrent Clinical Disorders. Journal of Child Neurology 2008; 23: 6-13.

12. MS Muthu, KM Prathibha. Management of a child with autism and severe bruxism: a case report. Journal of Indian Society of Pedodontics and Preventive Dentistry 2008 ;26(2):82-4.

13. Rajić A, Dzingalasević G. Autistic children and dental care. Acta stomatologica Croatica1989;23: 175-83.

14. Loo CY, Graham RM, Hughes CV. The caries experience and behaviour of dental patients with autism spectrum disorder. Journal of American Dental Association 2008 ;139(11):1518-24.

15. Hyman SL, Towbin K. Autism Spectrum Disorders. In Batshaw ML, Pellegrino L, Roizen NJ (eds.). Children with Disabilities (6th ed.). Baltimore, MD: Paul H. BrookesPublishing Co., 2007.

16. National Institute of Child Health and Human Development, National Institutes of Health (NIH). Autism Questions and Answers for Health Professionals.

17. Stecksen-Blicks C, Borssén E. Dental caries, sugar eating habits and tooth brushing in groups of 4-years old children in 1967–97 in the city of Sweden. Caries Research 1999;6: 409–14.

18. Alaluusua S, Malmivirta R. Early plaque accumulation – a sign for caries risk in young children. Community Dentistry and Oral Epidemiology 1994; 22: 273–76

19. Marinho VC, Higgins JP, Sheiham A, et al. Fluoride toothpastes for preventing dental caries in children and adolescent (Cochrane Review). In: The Cochrane Library, Issue Chichester: John Wiley & Sons, 2003.

20. National Institute of Child Health and Human Development, National Institutes of Health (NIH). Autism Spectrum Disorders.

21. Pilebro C & backma B. Teaching oral hygiene to children with autism. International Journal of Paediatric Dentistry 2005;15: 1 –9.

22. Lowe O, Lindemann R. Assessment of the autistic patient's dental deeds and ability to undergo dental examination. Journal of Dentistry for Children 1985; 52: 29–35.

23. Rade RE. Controversial issues in treating the dental patient with autism. Journal of American Dental Association. 2010 ;141(8):947-53.

24. Hernandez P, Ikkanda Z. Applied behaviour analysis: behaviour management of children with autism spectrum disorders in dental environments. Journal of American Dental Association. 2011; 142(3):281-87.

25. Johnson CD, Matt MK, Dennison D, Brown RS, Koh S. Preventing factitious gingival injury in an autistic patient. Journal of American Dental Association1996;127: 244-47.

26. Persson B. Brief report: a longitudinal study of quality of life and independence among adult men with autism. Journal of Autism Developmental Disorders. 2000;30: 61-6.

27. Pilebro C, Backman B. Teaching oral hygiene to children with autism. International Journal of Paediatric Dentistry. 2005;15: 1-9.

28. Klein U, Nowak AJ. Autistic disorder: a review for the pediatric dentist. Pediatric Dentistry. 1998;20: 312-7.

29. Rapin I, Tuchman RF. Autism: definition, neurobiology, screening, diagnosis. Pediatric Clinics of North Amercia 2008;55:1129-46.

30. Jaber. M A. Dental caries experience, oral health status and treatment needs of dental patients with autism. Journal of Applied Oral Science 2011;19 (3):212-17