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Case Report

Risperidone, zolpidem and melatonin to manage insomnia and irritability in a 14 month old child admitted to intensive care

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ABSTRACT

There is a dearth of literature when it comes to the use of risperidone and zolpidem in very small children (below the age of 5 years). Melatonin has been used in children with sleep problems even at a younger age. There are reports of its use in preschool children and it is available in the form of paediatric drops though usage in very small children has not been documented. This report describes a case of a 14-month old child who was treated for insomnia and delayed sleep onset with zolpidem and melatonin.

Keywords: Zolpidem, Risperidone, Melatonin, Insomnia, Irritability

INTRODUCTION

Insomnia has been defined as a problem in the quantity, quality, or sleep timing at least three times a week for at least 1 month.[1] It has been seen in various studies amongst children that 15-25% of children experience sleep related problems between the age of 1-6 years.[2] Sleep problems have been documented to be more in hospitalized children between the ages of 1-5 years than those in their home environment.[3] Reluctance to go to sleep or bedtime resistance along delayed sleep onset, interrupted sleep, mid night awakenings and decrease in total sleep time have been reported to be common sleep problems in young children.[4] Sleep problems in very young children (1-5 years) may translate over a period of weeks into daytime irritability and excessive crying. Thus sleep problems can affect physical health, behaviour and mood along with cognitive markers like attention, memory, concentration and daytime performance.[5]

Although most sleep disturbances in children are managed with behavior therapy alone, pharmacological intervention may be needed when behavioural methods are hampered by environment or in case of hospitalization.[6] Various medications have been used to induce sleep in very young children and there is no consensus present on the drug of choice in these cases.[6] Zolpidem, is a nonbenzodiazepine hypnotic used in the short-term treatment of insomnia in adults.[7] Despite ample studies in adults there is a dearth of information when it comes to the use of this drug in children. There is one case series where zolpidem has been used in children with no adverse effects occurring.[8] Melatonin is a hormone produced by the pineal gland that has been found to deficient in some children as well as children with developmental disabilities like autism spectrum disorders, fragile X syndrome and mental retardation.[9] It is safe and effective for the management of insomnia in children and such populations.[10] Risperidone is an atypical antipsychotic that has been US FDA approved for the management of conduct related disorders as well as anger and irritability in children with autism spectrum disorders.[11] There are reports of its use in preschool children and it is available in the form of paediatric drops though usage in very small children has not been documented.[12] This report describes a case of a 14-month old child who was treated for insomnia and delayed sleep

onset with zolpidem and melatonin. Despite restoring sleep the child remained irritable and was not cooperative to treatment in any intensive care unit. It was then that risperidone drops were administered and the child showed marked reduction in irritability in the absence of daytime sedation. To the best of our knowledge, the published literature is devoid of any information on use of zolpidem, melatonin and risperidone together in children between the age of 1-3 years.

CASE REPORT

A 14 month year old male child, who was born of a full term normal delivery with developmental milestones being normal till the date of admission, presented to our hospital with chief complaints of prolonged fever, cough with expectoration, perioral cyanosis and breathlessness. He had grunting with chest retractions and was unable to maintain steady oxygen saturation (PO_2). A tracheostomy was performed on the child. The child was unable to sleep at night despite regular breast feeding or patting. His irritability had increased appetite had decreased as he refused feeds and had lost 4 kg of weight from the time of admission. Despite having improved physically and being better he was not eating well and was very irritable throughout the day. At night he would sleep only in bouts of 1 hour and would get up crying. He would sleep late at around 4am and would continue to sleep in bouts till 11am in the morning. His total sleep time was 7 hours at the most. He had been in hospital for 2 months with a number of failed weaning trials. For the sleep problems and irritability, a psychiatric consultation was sought. The mother on clinical interview mentioned that the child had normal development, normal sleep pattern and was playful like other children prior to the illness. According to the pediatrician, the child would get up after one hour bouts of sleep and would seek his parent's attention by crying. This would disturb all other children in an intensive care unit whose sleep in turn would get compromised. Even at night, in spite of all efforts, he would not sleep for more than an hour at a time and one of the parents would have to stay awake the whole night with him. He would display extreme irritability and crying even during the daytime, for which he was started on midazolam by a continuous intravenous infusion at a dose 0.1 mg/kg but there was no relief in the agitated behavior. This was then replaced by Ketamine in a dose of 0.5 mg/kg body weight intravenously but with the same result. Both these drugs were initiated by the treating pediatrician. On clinical examination, the child was crying and distressed in the mother’s arms. We diagnosed him as having secondary insomnia and irritability clinically and started risperidone in a drop formulation to reduce irritability (at 11am daily - 1 drop a day and 1 drop extra if needed) hoping that reduced irritability would restore normal sleep. This was given for 4 days after which it was noted on follow up that irritability had reduced considerably but he was still not sleeping well at night. He would however sleep for 4 hours in the day. We then started him on zolpidem 5 mg half at night (2.5 mg) given in a crushed powder form with honey. This resulted in the child sleeping between 4am and 10am continuously with no awakenings. We then decided to add melatonin in view of a probable disrupted sleep cycle. Melatonin was given orally in powdered form at a dose of 3mg half tablet at night with half tablet of zolpidem as before. Within 2 days of this combination, the child was sleeping at 11pm and would get up fresh at 9am with no irritability in the day. Risperidone (1 drop at 11am) was continued in the day. No drowsiness was noticed when he woke up in the morning. Currently the child is on these medications and he is eating well and cooperative. The child is still on treatment for his respiratory distress which is also showing improvement. We plan to reduce medication once the child shifts to the ward shows further improvement.

DISCUSSION

Sleep disorders and irritability in children below 2 years may not always warrant psychopharmacological intervention but it is important to note that the safety and efficacy of psychotropic agents have not been established in this population. In such clinical situations, the critical issue remains whether to consider the behaviour a normal variation in development and hope for spontaneous remission, or whether to treat it with psychotropic drugs. In case of this patient, as the insomnia and irritability persisted and did not respond to midazolam and ketamine, the parents requested treatment of some sort to provide themselves much needed respite as well. The child was at an age and situation where behavioural intervention even if well planned was difficult to conduct. Zolpidem and melatonin were considered based on evidence available[13] and a remarkable improvement in sleep noted. Risperidone too was chosen for irritability as it was available in drops formulation and has been used in children as young as 2.5 years.[14] It is incorrect to claim that these drugs are safe and effective in an age group below 2 years based on a single case study but in this case efficacy was noted. This report should not be construed as evidence that this drug combination must be freely used in children below 2 years with irritability and sleep issue but rather behavioural methods and play therapy must be used first before medication is considered.

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