Iatrogenic Neonatal Coma

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To the Editor: Phenobarbitone is the first-line antiepileptic drug in neonatal seizure management. Though it is effective in controlling seizures, it requires drug level monitoring which is not available in resource limited settings. We present a 27-d-old neonate who was referred in comatose state due to phenobarbitone toxicity.

A male neonate was born at term with birth weight 3000 g in special newborn care unit (SNCU). At birth, the neonate required bag and mask ventilation with APGAR score at 1' and 5' after birth were 3 and 6. He had seizures within 12 h of life and was treated with phenobarbitone (loading dose: 20 mg/kg intravenous route). Subsequently the neonate became seizure free and was continued on phenobarbitone maintenance therapy (5 mg/kg/d). The total duration of SNCU stay and phenobarbitone therapy was 15 d. In view of persistent comatose state with weak cry, reduced activity and shallow respiratory efforts, he was referred to our health center. The presence of normal magnetic resonance imaging (MRI), electroencephalogram (EEG) and cerebrospinal fluid (CSF) findings as investigation workup raised the suspicion of phenobarbitone toxicity. The serum phenobarbitone level measured was in the toxic range (78.86 µg/ml). As phenobarbitone was tapered and stopped, gradual improvement in cry, activity and reflex was noted. There were breakthrough seizures which were treated and controlled with levetiracetam.

Phenobarbitone is a commonly used antiepileptic drug to control neonatal seizures [1]. Neonatal sedation and respiratory depression are commonly reported side-effects. Neonates

exhibit pharmacokinetic peculiarities related to low plasma protein binding. The therapeutic drug level of phenobarbitone is 10–30 µg/ml [2]. The plasma clearance of the drug is variable according to the gestational age, diagnosis and co-morbidities. Phenobarbitone requires routine drug level monitoring to titrate the dosage; which is not available in resource limited settings [3]. Hence, we report this case to increase the awareness of phenobarbitone toxicity and the possible role of levetiracetam where drug monitoring facilities are not available.

Compliance with Ethical Standards

Conflict of Interest None.

References

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