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Spuriously raised serum creatinine, why?: A case report

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ABSTRACT

Summary: Excipients are inactive ingredients that the American Food and Drug Administration (FDA) defines as any component of a drug product other than an active ingredient. They are used to aid the manufacturing process, to protect, support or enhance stability, or for bioavailability or patient acceptability. This is a case report of spuriously high serum creatinine due to an excipient found in intravenous Penatone (Dexamethasone Sodium Phosphate). There were four cases of spuriously raised serum creatinine levels in the Pathology Department of Hospital Sungai Buloh. All cases had normal baseline serum creatinine and spurious creatinine results were ranging from 200 to 2058 umol/L. Few investigations had been done to ascertain the possible root cause. Quality control, current used lot verification of creatinine test and different method analyses (Jaffe and enzymatic method), all showed acceptable results. Based on clinical records, all patients received intravenous Penatone once daily. When we analyzed 1 vial of Penatone (8 mg/2 ml), it contains approximately 42,000 umol/L creatinine. This certified that the Penatone used contains creatinine as an excipient. Spuriously raised serum creatinine in these cases was due to sample contamination by Penatone. It is possible to happen if blood is taken either from the same intravenous line used for medication infusion or from the same limb immediately after medication is served. It clearly implies the significance of pre-analytical factors on result accuracy.

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Rett Syndrome - Beyond the ordinary stereotypies in autism

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ABSTRACT

Summary: Rett syndrome is a neurodevelopmental disorder, mainly in girls, characterized by neuro-regression, stereotypic hand movements and recurrent seizures. It could be misdiagnosed as autism spectrum disorder (ASD) and primarily due to methyl-CpG binding protein 2 (MECP2) gene mutation, which occurred sporadically or inherited in an X-linked dominant pattern. A 4 years old Malay girl, who was born term with an uneventful birth history, was initially followed up for Autism Spectrum Disorder (ASD) from the age of two. She fulfilled the Diagnostic and statistical manual mental disorder (DSM V) criteria for ASD. During her follow up, she was also found to have global developmental delay with neuroregression since the age of 18 months old. Subsequently, she developed recurrent afebrile seizures since the age of three. She was thriving well with no dysmorphic features. She had a broad based gait with frequent hand flapping. Neurological examination revealed power of 4/5 in all 4 limbs with hyperreflexia. Her muscle tone was normal without wasting. Inborn error of metabolism (IEM) screening was negative. Magnetic Resonance Imaging (MRI) of the brain was normal. Electroencephalogram (EEG) revealed mildly slow background for age, burst of 3-3.5Hz spike predominantly at the right hemisphere during awake, and generalised spike discharges predominantly in sleep. She was started on syrup Sodium Valproate to control her seizures. Correlation with the history, Rett syndrome was suspected. MECP2 gene mutation was detected. Rett syndrome should be suspected in child, especially girls, with neuro-regression, stereotypic hand movements and seizures. Early recognition is important for timely management of the disease and subsequent genetic screening and counselling.

Keywords: Rett syndrome, Autism spectrum disorder, MECP2 gene mutation