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Pseudohyperkalemia in infants: A reason to postpone the surgery?

Teena Bansal*, Jatin Lal**

*Assistant Professor; **Professor, Department of Anaesthesiology & Critical Care, Pt. B.D. Sharma University of Health Sciences, Rohtak-124001, Haryana (India)

Correspondence: Dr Teena Bansal, 19/6 J Medical Campus, PGIMS, Rohtak -124001, Haryana (India);

Mobile: +91-9315839374; E-mail: aggarwalteenu@rediffmail.com

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Measurement of serum potassium is not indicated routinely in infants undergoing surgery. It is indicated in some particular conditions, like in patients with vomiting, diarrhoea, ileostomy, colostomy, burns and diuretic therapy. The most common cause of hyperkalemia in infants is pseudohyperkalemia. Sometimes, values of potassium may be falsely elevated and it becomes a dilemma for anesthesiologist.

Laboratory results are the basis of 60-70% of clinical decisions. Potassium is one of the most commonly tested investigation. 32-75% of laboratory errors occur before analysis of the sample i.e. during collection, especially in infants. During the analytical phase, 4-32% of all laboratory errors occur.¹

In vitro hemolysis can take place at the time of

collection of sample due to a difficult venipuncture, narrow gauge needles and because of extremes of temperature at the time of transport and storage. This hemolysis leads to pseudohyperkalemia as a result of release of potassium from erythrocyte cytosol. This increase in levels of potassium is directly related to plasma Hb concentration. To derive the actual potassium level, a correlation factor of $0.00319 \times$ plasma Hb (mg/dL) has been devised.²

Pseudohyperkalemia in infants should be suspected when the laboratory value of the measured potassium is high but the patient doesn't manifest signs of hyperkalemia such as weakness, confusion, muscular and respiratory paralysis and abnormal electrocardiogram and surgery need not be postponed in such cases.

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