Safety of rapid intravenous loading of valproate.

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Abstract

BACKGROUND: The introduction of IV valproic acid (VPA) has facilitated its use in situations where oral administration is not feasible. The present study was designed to evaluate the safety of administration of undiluted VPA (20 or 30 mg/kg/min) administered intravenously at rates of 6 or 10 mg/kg/min.

METHODS: Forty patients received a VPA loading dose (20 or 30 mg/kg) at 6 or 10 mg/kg/min. Heart rate (HR), mean arterial pressure (MAP), oxygen saturation, respiratory rate, and three lead ECG measurements were taken at baseline. Following dose administration the measurements were repeated at 2.5-min intervals for the first 20 min, then at 30, 45, 60 min, and 4 h. Local tolerance was defined as absence of irritation or phlebitis at the site of injection. Systemic tolerability was defined as absence of significant changes in vital signs and level of consciousness (LOC). Changes in vital signs and local intolerance scores were compared across time using repeated measures analysis of variance.

RESULTS: Rapid administration was well tolerated with no significant changes in HR (p=0.9) or MAP (p=0.7). Complaints of local irritation were transient, lasting less than 3 min in all patients with no indication of redness, irritation, or phlebitis. No patient exhibited a decline in the LOC.

CONCLUSIONS: Rapid administration of undiluted valproate is safe and well tolerated at infusion rate up to 10 mg/kg/min and doses of up
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to 30 mg/kg. The lack of serious cardiovascular, neurological, hepatic, or local adverse effects supports the use of VPA in emergent situations.

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