

## Selected Summaries

### Nebulized Salbutamol and Cardiac Arrhythmia

[Kaller KA, Bhisitkul DM. Supraventricular tachycardia: A complication of nebulised albuterol. *Pediatr Emerg Care* 1995,11: 98-99.]

Nebulized salbutamol (also known as albuterol in USA), a beta-adrenergic agonist, is currently considered an effective and relatively innocuous first line therapy for acute bronchial asthma. This case report describes a 19 months, 14 kg child, who developed supraventricular tachycardia (SVT) with use of nebulized salbutamol. He received 2.5 mg salbutamol in 3 ml normal saline (0.18 mg/kg/dose) at 15 min, 1 hour and 3 hour after arrival in hospital. Forty minutes following the last treatment, the child's heart rate was noted to be 250/min, and ECG was consistent with SVT (ventricular rate 277/min without P-waves). Vagal stimulation by ice packs over face brought the heart rate abruptly down to 180/min. Repeat ECG showed sinus tachycardia only. Serum potassium at this time was normal (4.6 mmol/L). No further episode of SVT was observed over the next 2 days of observation though nebulised salbutamol therapy was continued for his reactive airway disease.

#### Comments

Salbutamol, a direct acting sympathomimetic agent has a selective beta-adrenergic effect. Since beta receptors in heart are mainly of beta 1 type, it is believed that salbutamol has minimal cardiovascular effect. Recently, however,

presence of beta 2 adrenergic receptors have been documented in cardiac atria(1). Moreover, tachycardia and palpitation do occur in a significant number of patients treated with salbutamol. Sixty five per cent of pediatric patients in a study(2) developed tachycardia after salbutamol ingestion. Cardiac arrhythmias though well documented in adults, have not been commonly described in pediatric patients as a complication of salbutamol therapy. Sudden death and atrial arrhythmia, induced during salbutamol inhalation through a spacer(3), extrasystoles after nebulised salbutamol, and unifocal ventricular ectopics, and several ECG changes have been reported during salbutamol infusion in adults. In conclusion, children receiving nebulised salbutamol may be at risk of developing cardiac complications, and cardiac monitoring should be considered in these cases.

#### REFERENCES

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3. Breeden CC, Safirstein BH. Albuterol and spacer induced atrial fibrillation. *Chest* 1990, 98: 762-763.

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