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Pediatrics

CHILDHOOD ASTHMA Sixteen children, 8 to 14 years old, with symptomatic childhood bronchial asthma resulting in forced expiratory volumes at one second (FEV_1) of less than 65 per cent of vital capacity, were studied. FEV_1 and expiratory peak flow rate (EPFR) were evaluated 5, 15, and 30 minutes after inhalation of 2.5 mg of isoproterenol aerosol. Three test cycles were performed, with five-minute intervals between the 30-minute pulmonary function test and the next inhalation of isoproterenol. The results indicate that FEV_1 increased an average of 57 per cent after the first dose and an average of 79 per cent 15 minutes after the third dose. EPFR increased 31 per cent after the first dose and 54 per cent after the third dose, with peak values occurring at the 5- or the 15-minute test. Heart rate changes showed marked individual variations, with increases of 10 to 60 beats/min, but bore no correlation to the increase in pulmonary function. Repeat doses of isoproterenol aerosol at 35-minute intervals resulted in significantly better FEV_1 and EPFR than a single inhalation. Subsequent inhalations result in further improvement because the initial inhalation has decreased airway obstruction to permit further penetration of the aerosol into the smaller airways. (*Featherby, E. A., Weng, T. R., and Levison, H.: Measurement of Response to Isoprenaline in Asthmatic Children, Arch. Dis. Child. 44: 382 (June) 1969.*)

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