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OVERNIGHT PROTECTION BY INHALED SALMETEROL ON EXERCISE-INDUCED ASTHMA IN CHILDREN.

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Twentythree children (♂:12;♀:11) mean age 11 years, with exercise induced asthma participated in a double-blind randomised placebo controlled study. The children received inhaled salmeterol 25 µg; salmeterol 50 µg and placebo by diskhaler at 10 p.m. on three separate days. Next morning (half at 8 a.m. and half at 10 a.m.) they run on a motor-driven treadmill for six minutes with sub-maximal load. Lung function was measured by maximal expiratory flow volume loops before running, immediately after, and 3, 6, 10 and 15 minutes after running.
Mean maximum reduction in FEV1 after treadmill run was 34% before inclusion in the study. Mean maximum fall (with 95% C.I.) in FEV1 was significantly greater after placebo: 29.5%(22.9-36.1) than after salmeterol 25 µg: 18.8% (12.2-23.4) or salmeterol 50 µg: 18.4% (12.0-24.8)(p=0.001). In addition to the reduced bronchoconstriction after exercise, baseline lung function (FEV1) before exercise was significantly higher after both salmeterol 25 µg: 2.42 l/s(2.1-2.7) and salmeterol 50 µg: 2.49 l/s(2.2-2.8) than after placebo: 2.19 l/s(1.9-2.5)(p<0.0001). No differences were found between children tested at 8 a.m. or 10 a.m. or between salmeterol 25 µg or 50 µg. Thus inhaled salmeterol 25 µg or 50 µg offered overnight protection against exercise-induced asthma and improved baseline lung function in the morning as compared to placebo.

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CARDIORESPIRATORY PROFILE IN INFANTS BORN AFTER INTRA-UTERINE GROWTH RETARDATION (IUGR).

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Small-for-gestational-age (SGA) infants, born after IUGR, are considered a risk group because of the higher morbidity and incidence of SIDS during the first year of life. To assess the profile of respiratory and cardiac control of these infants, we performed polysomnographic recordings in 10 SGA and 16 appropriate-for-gestational-age (AGA) clinically and neurologically normal full-term newborns.

We found that SGA significantly deffered from ASA in: a) faster respiratory and heart rate; b) higher amount of central respiratory pauses; c) lower amplitude of heart rate variability in different frequency bands (modifications similar to those observed in SIDS). However, SGA were similar to AGA in: a) absence of obstructive respiratory pauses; b) absence of central respiratory pauses > 10sec duration; c) presence of similar between-state differences of respiratory and heart rate characteristics.

Conclusion: In spite of the absence of striking deviation from the normal, our data demonstrate significantly different cardiorespiratory control in SGA, which can be related to the higher vulnerability of this at risk population.

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EFFECT OF LORATADIN AND CETIRICIN ON EARLY AND LATE PHASE ASTHMATIC REACTION IN THE SENSITIZED GUINEA PIG

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The new generation of antihistaminic drugs has been considered for prophylactic use in asthma. We investigated the effect of Loratadin and Cetiricin on early and late phase asthmatic reaction in the sensitized guinea pig. Sensitization was performed by inhalation of 1% ovalbumin aerosol for 3 min. twice in two weeks. 7 days after the last inhalation Loratadin or Cetiricin were given by pharyngeal tube (1 mg/kg) and followed by specific bronchial provocation with ovalbumin using a two chamber bodyplethysmograph with measurement of compressed air (CA) as sensitive parameter of airway obstruction in the guinea pig. Late phase allergic reaction was investigated by eosinophilic count in the bronchoalveolar fluid 24 hours after provocation. In the guinea pigs treated with either drug (n=6 for each) the incidence ($p<0.04$) and severity (CA, $p<0.01$) of bronchial reaction on specific provocation differed significantly from the non-treated control group (n=18). The best protection of early phase reaction was achieved by Cetiricin, late phase reaction was not inhibited by either drug. However, in a parallel experiment (n=6) late phase reaction was completely inhibited by inhalation of 1% Nedocromil-Sodium in the same model. The effect of both antihistamins in this experiment underlines the importance of histamin in the early phase allergic reaction in the guinea pig. However, there was no effect on for chronic asthma important late phase reaction in this model, in contrary to the effect of pretreatment with inhaled Nedocromil-Sodium.

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AN EVALUATION OF CHILDREN SUSPECTED OF HAVING PULMONARY TUBERCULOSIS.

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The aim of the study was to examine the diagnoses that are confused with pulmonary tuberculosis (TB) in children investigated and treated for tuberculosis. This prospective study was conducted in a region with a TB incidence of >800 new cases/100 000/year. Methods: Children suspected of having TB or pneumonia with peripheral eosinophilia (PIE) or congenital pulmonary anomalies were investigated. Results: Of the 340 children suspected of having TB (WHO criteria) 63 (19%) were found to have other pulmonary pathology [(pneumonia (35%), bronchopneumonia with wheezing (24%) or asthma with segmental/lobar collapse (14%)]. Of 14 children with PIE 6 (43%) were initially incorrectly diagnosed and treated for TB. Of 54 children with congenital lung anomalies 8 (15%) were treated for TB before the correct diagnosis was made. Congenital anomalies most often confused with TB were unilateral pulmonary hypoplasia, bronchogenic cyst and tracheal bronchus with anomalous lobe. Conclusion: In 19% of children initially thought to have TB another diagnosis was found. Pneumonia, bronchopneumonia with wheezing and asthma were the diagnosis most often confused with TB. Children with an atypical clinical picture or course should be examined for pneumonia with eosinophilia or congenital lung anomalies.

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CLINICAL AND FUNCTIONAL RESPONSE TO SALBUTAMOL IN ACUTE BRONCHIOLITIS.

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Introduction: There is significant controversy about the role of bronchodilator therapy for bronchiolitis. Some authors have found improvement with bronchodilators when a clinical score is applied but others have not found any effects when pulmonary function is used.

Methods: We have studied the pulmonary function, O_2-saturation and a clinical score before and 20 minutes after inhaled salbutamol in 36 infants (less than 1 year old) with bronchiolitis. 88% of them were VRS positive.
Pulmonary function was studied by measuring forced expiratory flow with rapid thoraco-abdominal compression technique.

Results:	Pre -BD	Post-BD	p
Score	6.41±3.59	8.56±3.24	p<0.001
O2-Sat	88.12±4.59	86.41±5	n.s.
$\%V_{maxFRC}$(pred)	35.34±16.88	25.02±9.68	p<0.001

Conclusion: We have found a significant deterioration both in clinical score and pulmonary function after administration of salbutamol in bronchiolitis.

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INFLUENCE OF LUNG FUNCTION AND REFLEX ACTIVITY ON THE SUCCESS OF PATIENT TRIGGERED VENTILATION

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During patient triggered ventilation (PTV) each of the infant's respiratory efforts will trigger a positive pressure inflation, providing that the respiratory effort is of sufficient magnitude to exceed the critical trigger level. It is likely therefore that the nature of the infant's lung function and respiratory reflex activity will influence the success of PTV. The aim of this study was to test that hypothesis. 20 premature infants (median gestational age 29 weeks) in the recovery stage of respiratory distress were studied at a median postnatal age of 2.5 days. Lung function was assessed by measurement of compliance using a single breath technique. Reflex activity was assessed by measurement of the strength of the Hering Breuer reflex, indicated by the degree of prolongation of expiration following end inspiratory occlusion. PTV was considered to have failed if the infant became apnoeic or required an increased level of respiratory support. PTV failed ultimately in 6 infants, compliance of the respiratory system of those 6 infants did not differ significantly from the rest of the cohort, but the Hering Breuer reflex was significantly weaker ($p<0.01$). Although the infants in whom PTV failed compared to those in whom it succeeded were significantly more immature and of lower birthweight ($p<0.01$), multiple regression analysis demonstrated that reflex activity was independently associated with PTV failure after accounting for gestational age, birthweight and compliance. We conclude that failure of PTV is more likely in immature infants who have a weak Hering Breuer reflex.