PDF hosted at the Radboud Repository of the Radboud University Nijmegen

The following full text is a publisher's version.

For additional information about this publication click this link.
http://hdl.handle.net/2066/23132

Please be advised that this information was generated on 2018-12-13 and may be subject to change.
The Effectiveness of Inhaled Steroids as First-Line Therapy in the Treatment of Newly Detected Asthma in the Open Population

P. Youngchaiyud, N. Maranetra, A. Nana, S. Charoenratanakul

Introduction: Recent guidelines advise to start treatment with inhaled steroids in asthma in case of frequent symptoms or use of beta-agonists. We investigated if inhaled steroids would also be effective as first-line treatment in asthma patients with no prior diagnosis of asthma.

Method: 54 Adult asthma patients were selected for participation in a randomized, double-blind, placebo-controlled trial. All patients had been measured by a set of a screening procedure in 1155 randomly selected persons out of 10 general practices. They complied to the following inclusion criteria for the trial (objective asthma criteria): FEV1 (forced expiratory volume in one second) < reference value minus 2 standard deviations on at least two separate assessments 3 months apart or a PC20 histamine < 2 mg/ml combined with a reversibility of the airway obstruction > 15% of the reference value. 31 subjects were willing to participate in this 1-year trial. The experimental group (15 patients) were treated with fluticasone propionate 250 µg two times daily, the control group consisted of 16 patients. FEV1 and PC20 were monitored once every three months, symptoms and peakflow weekly.

The influence of fluticasone on the effect parameters was estimated by repeated measurement analyses.

Results: Patient characteristics of both trial groups did not differ significantly at baseline. At the end of the trial the difference in FEV1 was 76 ml in favour of the experimental group (p = 0.02). In the experimental group the PC20 showed an improvement of 1.4 doubling doses (p = 0.002) during the trial. There was no significant improvement in symptoms or peakflow but a tendency of improvement in number of exacerbation.

Conclusion: Inhaled steroids have been shown to be effective as first-line therapy in newly detected asthma in the open population.

Comparison of the Efficacy and Safety of Salbutamol Delivered Via a Novel Multidose Dry Powder Inhaler ( DPI ) or Metered Dose Inhaler ( MDI ) before and after a Period of Routine Clinical Use

A.H. Morris, M.D. Pearson, M.B. Allan, J.H. Campbell, M. Parry-Billings. Royal Hallamshire Hospital Sheffield, UK; Pontefract General Infirmary, UK; St Lites Hospital Bradford, UK; Grantham and District Hospital and Innova Biomed Limited, St Albans, UK

The study compared the lung function response to salbutamol delivered via a novel DPI (Innovata Biomed Limited) and MDI (Ventolin®, Allen and Hanburys), after a period of routine clinical use. Two patients with mild to moderate asthma with FEV1 reversibility (≥ 15% and ≥200 ml) were recruited. Spirometry (FEV1, FVC, PEFR) was performed following inhalation of 100 µg (at t = 0), 100 µg (at t = 60 min) and 200 µg (at t = 60 min) equivalent to cumulative administration of 100, 200 and 400 µg. Increases in FEV1 were similar following salbutamol via DPI or MDI (mean ± SD difference 0.01 ± 0.18 L). Following treatment with 100 µg salbutamol (the lowest dose deliverable by both devices), the increases in FEV1 were similar for both devices (mean ± SD difference 0.01 ± 0.18 L). Improvement in lung function were the same following treatment via DPI or MDI after the 4-week DPI treatment period. Heart rate and tremor recordings and adverse event reports were similar for the two treatments. These findings support the efficacy and safety of DPI, the therapeutic equivalence of DPI and MDI and the in-use stability of the DPI product.

Aerosol Deposition from an Intra-Airway Aerosol Generator

N. MacIntyre, S. Andjulov. Div of Respiratory and Critical Care Medicine, Duke University, Durham, NC, USA

Aerosol delivery to the lungs of intubated patients is usually less than 10% when using a conventional nebulizer in the ventilator circuit (Cris Care Med 13: 81, 1985). We have recently developed a 1 mm coaxial (OD) design catheter (Trudell Medical, London, Canada) which can be placed directly in the airways and produce an aerosol at its tip. Since the upper airway (and endotracheal tube) are bypassed by this catheter, optimal particle sizing for lung deposition might be different than that expected for conventional aerosol generators external to the patient. To predict aerosol deposition in the lung from this catheter when positioned just above the carina, we developed a computer model of the lung based upon the morphometric data of Weibel. Ventilation parameters were tidal volume 900 ml, inspiratory and expiratory time of 3 sec each, and a constant inspiratory flow pattern. Data was generated for particle sizes of 2.5, 5, 7.5 and 10 micron MMD. Deposition was calculated as a fraction of total aerosol generated.

Aerosol Delivery to the Lungs of Intubated Patients is Usually Less than 10% when Using a Conventional Nebulizer in the Ventilator Circuit

A.H. Morris, M.D. Pearson, M.B. Allan, J.H. Campbell, M. Parry-Billings. Royal Hallamshire Hospital Sheffield, UK; Pontefract General Infirmary, UK; St Lites Hospital Bradford, UK; Grantham and District Hospital and Innova Biomed Limited, St Albans, UK

We audited measured outcomes and asthma management costs in 32 patients who had been changed from a metered dose inhaler (MDI) to the turbuhaler for their inhaled prophylaxis.

Aerosol Delivery to the Lungs of Intubated Patients is Usually Less than 10% when Using a Conventional Nebulizer in the Ventilator Circuit

A.H. Morris, M.D. Pearson, M.B. Allan, J.H. Campbell, M. Parry-Billings. Royal Hallamshire Hospital Sheffield, UK; Pontefract General Infirmary, UK; St Lites Hospital Bradford, UK; Grantham and District Hospital and Innova Biomed Limited, St Albans, UK

We conclude that overall deposition and optimal particle size distributions for this system are different from that obtained from conventional systems external to the patient.