Results
Mean total scores were significantly (p<0.025) higher for Turbohaler (8.0 ± 2.0) and Easibreathe (8.3 ± 2.4) than MDI (4.9 ± 3.0) on enrollment and at 6 hours; Turbohaler (6.8 ± 2.9), Easibreathe (7.4 ± 2.6), MDI (4.9 ± 3.0). At 24 hours differences were not significant; Turbohaler (7.6 ± 2.6), Easibreathe (7.5 ± 2.9), MDI (6.1 ± 2.8). Fewer patients achieved near perfect scores of 9 or 10 when using MDI. The major difficulties were assembling the MDI and spacer and telling if the Turbohaler or Easibreathe is empty. Mean total scores fell significantly between enrollment and 6 hour review, but rose again by 24 hours.

Conclusion
Many patients have difficulty in using inhalers. Repeat tuition after 6 hours improves inhaler technique. In addition to being more portable than MDI, both Turbohaler and Easibreathe inhalers were more likely to be used correctly after initial tuition.

PEAK EXPIRATORY FLOW MEASUREMENT IN THE ELDERLY

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Introduction: Elderly patients are frequently observed as having poor peak flow technique, which impairs assessment of their airways disease and response to drug therapy. The aim of the study was to determine what proportion of elderly patients do have poor peak flow technique, and to see whether technique can be improved with teaching.

Methods: Consecutive patients ≥60 yrs with an acute exacerbation of airflow limitation, admitted to an integrated medical/elderly unit were assessed, usually within two days of admission. Patients who had never used a peak flow meter, and patients who were too unwell to participate, were excluded. The best of 3 attempts was assessed as satisfactory or unsatisfactory before and after teaching. Where possible the patients were re-assessed 3-5 days later and 3 recordings taken.

Results: Of 81 patients, 5 were too unwell and 6 had never seen a peak flow meter, leaving 70 (86%) who were assessed (36 male; mean age 74 yrs, range 61-88yrs). At baseline assessment, 17 (24%) had satisfactory technique. Of the 53 patients who initially had poor technique, 24 (45%) developed satisfactory technique following instruction, their mean peak flow improved from 212 to 247 l/min (17%) compared to an improvement from 117 to 125 l/min (9%) in those whose technique remained poor. 18 of these 24 patients were re-assessed a few days later and technique remained satisfactory in 14 (75%).

Conclusion: Only one quarter of elderly patients with exacerbations of airflow limitation and previous peak flow meter use have satisfactory technique. Despite careful instruction, nearly one half remain unteachable.

The Measurement of Airway Resistance in Older Adults


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Introduction: Constant volume plethysmography can be used to measure airway resistance (Raw) and specific airway conductance \(SGaw = (1/\text{Raw})\times \text{volume}\). Because a forced expiratory manoeuvre is not used, it may be preferable to spirometry in assessing lung function and airway variability in older people. The aim of the study was to assess its use in people aged 70+ with asthma compared with healthy controls, before and after bronchodilatation (bd). Method: We recruited 50 people with a label of asthma and 33 controls with no history of asthma (mean age of both 76, range 70-89). Subjects performed spirometry (wedge bellows, ARTP/BTS criteria) and a minimum of 3 measures of SGaw using a panting technique, both before and 30 minutes after combined nebulised salbutamol 5mg and ipratropium bromide 0.5mg. Results: All controls had pre-bd FEV1 ≥75% predicted. In the asthma group 39 (78%) were able to perform spirometry and 27 (54%) SGaw satisfactorily. In the control group 30 were able to perform spirometry and 25 were able to perform SGaw. Using repeated measures of (log) SGaw (pre-bd) we found a within-subject coefficient of variation of 7.1%. Using 35% as a cut off for significant SGaw change (min. 0.02cmH2O/s), 19/27 (70%) of the asthma group demonstrated SGaw reversibility compared with 20/30 (51%) who had FEV1 reversibility (>15% inc., min. 200mls). Seven controls (28%) increased SGaw (max. 72%) but all had pre-bd values in the normal range.

<table>
<thead>
<tr>
<th>Mean</th>
<th>Asthma Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEV1 (%) pre-bd (L)</td>
<td>1.2 (60)</td>
<td>2.1 (101)</td>
</tr>
<tr>
<td>FEV1 (%) post-bd (L)</td>
<td>1.43 (71)</td>
<td>2.2 (105)</td>
</tr>
<tr>
<td>SGaw (%) pre-bd (cmH2O/l)</td>
<td>0.08 (33)</td>
<td>0.19 (80)</td>
</tr>
<tr>
<td>SGaw (%) post-bd (cmH2O/l)</td>
<td>0.13 (59)</td>
<td>0.22 (93)</td>
</tr>
<tr>
<td>FEV1 % change (range)</td>
<td>23.1 (-4-87)</td>
<td>3.8 (-10-19)</td>
</tr>
<tr>
<td>SGaw % change (range)</td>
<td>89.2 (-14-300)</td>
<td>20.6 (-30-72)</td>
</tr>
</tbody>
</table>

Conclusion: Although only 54% of elderly people with asthma could perform Raw measurement, SGaw was highly reproducible and did show greater change compared with FEV1 post-bd.

INFLUENZA VACCINATION OF HEALTH CARE WORKERS IN LONG-TERM CARE PROTECTS ELDERLY PATIENTS

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on behalf of the West of Scotland Influenza Study Group

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Introduction: National policies for influenza vaccination of health care workers (HCWs) are contradictory and confused. Vaccination is recommended by the NIH in the USA, but not by the Departments of Health in the UK. In a previous study we showed that vaccination of HCWs in long-term care geriatric hospitals was apparently associated with a significant reduction in patient mortality (JID 1997; 175: 1). We have now performed a definitive study...