nine acute trusts in the UK. All hospitals (eight teaching hospitals and one district general hospital) had an acute NIV service and a local coordinating clinician was recruited through the BTS Respiratory Critical Care Specialist Advisory Group. Questionnaires and data collection guidelines were distributed by e-mail to the local lead who was responsible for distributing, collecting and marking the questionnaires. Three hundred and ninety-four completed questionnaires were returned and scored with weighting given towards clinical relevance and current evidence base. To generate comparative analysis the groups were compared with a ‘control’ group, which consisted of 119 medical consultants and trainees, nurses and physiotherapists working on general medical wards but not in critical care or specialist respiratory medicine. Respiratory and critical care physicians were combined for the purposes of data analysis as there was no difference between these groups.

In comparison with the ‘control’ group, knowledge varied considerably between the different groups. The respiratory and critical care consultants, physiotherapists, ST3/SpR and critical care ST1/2 doctors achieved significantly higher scores. This probably reflects the effect of targeted teaching during induction programmes and during clinical work. Furthermore, the scores increased with increasing seniority in each group, which adds to the validity of this questionnaire. It was noteworthy that the physiotherapists performed well and had the highest scores for technical knowledge, reflecting their involvement in the initiation of NIV in all the trusts surveyed. The respiratory and critical care nurses showed equivalence to the control group across all the areas examined, which highlights this as an important group for further education. Following further validation, the use of this, or a similar questionnaire, could be incorporated into training and competency assessment to monitor educational needs.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Indications (total 8)</th>
<th>Technical (total 7)</th>
<th>Practical (total 11)</th>
<th>Published Evidence (total 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior R&amp;CC Nurse</td>
<td>37</td>
<td>-0.6</td>
<td>-0.1</td>
<td>-0.5</td>
<td>-0.4</td>
</tr>
<tr>
<td>Senior R&amp;CC Nurse</td>
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<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
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<tr>
<td>Senior 2 R&amp;CC Physiotherapist</td>
<td>29</td>
<td>1.1*</td>
<td>3.7*</td>
<td>2.4*</td>
<td>0.5*</td>
</tr>
<tr>
<td>Senior 1 R&amp;CC Physiotherapist</td>
<td>28</td>
<td>1.6*</td>
<td>3.1*</td>
<td>2.5*</td>
<td>1.1*</td>
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<tr>
<td>R&amp;CC FY1-2</td>
<td>12</td>
<td>0.8</td>
<td>-0.4</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>R&amp;CC ST1+2</td>
<td>30</td>
<td>1.3*</td>
<td>2.1*</td>
<td>3.8*</td>
<td>0.7*</td>
</tr>
<tr>
<td>R&amp;CC ST3/SpR</td>
<td>47</td>
<td>2.0*</td>
<td>3.1*</td>
<td>2.8*</td>
<td>1.1*</td>
</tr>
<tr>
<td>R&amp;CC Consultant</td>
<td>53</td>
<td>2.2*</td>
<td>2.8*</td>
<td>3.0*</td>
<td>1.2*</td>
</tr>
</tbody>
</table>

Mean difference between control group (n=118) and other groups surveyed; * (shaded) = p<0.05; R&CC = Respiratory & Critical Care; FY= Foundation Year; ST = Specialist Trainee; SpR = Specialist Registrar

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REFERENCES


Efficacy of omalizumab in the treatment of nasal polyposis

Omalizumab, a humanised monoclonal anti-immunoglobulin E (IgE) antibody, is indicated as adjuvant treatment in refractory allergic severe asthma.1 In both chronic rhinosinusitis (CRS) with nasal polyps (NP) and allergic rhinitis, IgE is increased in mucosal tissue and frequently in serum. The role of omalizumab has been clearly established in allergic asthma and rhinitis, but remains to be elucidated in NP.2 The only evidence for the potential efficacy of omalizumab in NP relies on case reports and small series of patients which suggest that, when NP and asthma coexist, the anti-IgE may have therapeutic value on NP.3 4

We describe the evolution of NP in 19 patients who were treated with omalizumab for severe asthma and who also had CRS with NP (age 49±9.5 years, 58% women).

The baseline serum IgE level was 257 KU/l (range 115–328). The subcutaneous dosage of omalizumab was based on weight and baseline serum IgE, and treatment follow-up was 16 months (range 15–28). Thirteen patients (68%) with CRS with NP had undergone at least one endoscopic sinus surgery (2 range 1–5), with a mean elapsed time of 29 months (range 18–59) between surgery and the start of omalizumab treatment.

All patients with CRS with NP were examined at baseline and every 3 months by an ENT specialist. Using nasal endoscopy, the size of NP was scored in both nasal cavities as 0 (no polyp); 1 (polyps restricted to the middle meatus); 2 (polyps in the middle meatus but not reaching the upper edge of the inferior turbinate); 3 (polyps between the upper and lower edges of the inferior turbinate); and 4 (large polyps reaching the floor of the nasal fossa), with a bilateral total score ranging from 0 to 8.

The use of intranasal corticosteroids was also recorded both at baseline and during treatment. Data are presented as median (25–75th interquartiles) and the non-parametric Wilcoxon test was used for statistical comparisons (p<0.05 was considered statistically significant).

NP size was significantly reduced at the end of follow-up compared with baseline (1 (0–2) vs 2 (0–4), p=0.035). None of the patients needed additional surgery during omalizumab treatment. Furthermore, there was a clear reduction in the proportion of patients using intranasal corticosteroids between baseline and the end of the follow-up period (95% vs 42%, p=0.002).

These observations show that omalizumab is effective in improving, or at least stabilising, the natural course of CRS with NP in patients treated for refractory severe asthma, in accordance with previous findings.3 4 In the surgical group, the long time between surgery and the start of omalizumab treatment (29 months (range 18–39)) is in agreement with the EP’OS definition of NP recurrence and in keeping with an improvement in NP due to omalizumab rather than to surgery. In addition to its effect on severe asthma, this analysis supports the potential benefit of omalizumab in NP by reducing NP size and the need for further medical and surgical treatment, and strongly suggests the potential role of IgE in the pathophysiology of NP. However, larger prospective studies are needed to confirm our preliminary results.
Outcomes following non-invasive ventilation for hypercapnic exacerbations of chronic obstructive pulmonary disease

Many carefully crafted studies with different end points have shown significant benefits with non-invasive ventilation (NIV) over and above conventional medical treatment alone in the management of hypercapnic exacerbations of chronic obstructive pulmonary disease (COPD). However, most data have evaluated highly selected patients within stringent realms of randomised controlled trials. Since strict criteria need to be fulfilled before clinical trial entry (often excluding elderly patients and those with major co-morbidities, electrolyte disturbance and severe exacerbations), outcomes may not be reflective of everyday practice. We wished to highlight demographics, physiological variables, outcomes and 1-year survival in a large cohort of patients receiving ward-based NIV for hypercapnic exacerbations of COPD.

Data were gathered retrospectively from a password-protected database for all patients commenced on ward-based NIV for respiratory failure. All individuals had been admitted to the respiratory unit in Aberdeen Royal Infirmary (a large teaching hospital in the north-east of Scotland) between January 2006 and June 2009 inclusive and had been assessed by a middle grade respiratory physician or above regarding suitability for NIV. In all patients, appropriate pharmacological treatment was initiated and NIV pressures were titrated upwards as tolerated.

Over a 3.5-year period, 275 separate patients (158 females (57%) with mean age 71 years) received NIV with a mean baseline pH and PaCO₂ of 7.24 and 10.23 kPa, respectively. Of the 275 patients, 89 (32%) died in hospital (5 of these failed to tolerate NIV and were not considered candidates for intensive care), 174 (63%) were discharged home and 12 (5%) were transferred to intensive care after failing treatment with NIV. No patients received domiciliary NIV following hospital discharge. Of those discharged, cumulative all-cause mortality after 3, 6, 9 and 12 months was 44%, 50%, 52% and 59%, respectively (figure 1).

These real-life data indicate that in unselected patients with hypercapnic exacerbations of COPD who require NIV, almost two-thirds survive to hospital discharge. As expected, our inpatient mortality was greater than that reported in randomised controlled trials. For example, in one study (n=236 randomised individuals), the inpatient mortality in NIV-treated individuals (n=118) was 10% versus 20% in those receiving usual medical care (p=0.05). In another study (n=85 randomised individuals), the inpatient mortality was 9% in those receiving NIV versus 29% in the control group (p<0.05). In these studies, the mean pH (7.52 and 7.27, respectively) was greater than the pH in our study (7.24). There is a paucity of published data regarding long-term survival of patients discharged from hospital following treatment with NIV. We have shown that the all-cause mortality rate was as high as 44% within the first 3 months of hospital discharge, although this figure only rose by a further 11% over the subsequent 9 months. This suggests that further studies are required to identify clinical features associated with death within 3 months of hospital discharge. All patients discharged after receiving NIV should be established on optimal pharmacological treatment and considered for interventions such as early pulmonary rehabilitation. The role of domiciliary NIV in this patient group also needs further evaluation.

REFERENCES
