Suitability of and tolerance to Iotrolan 300 in bronchography via the fibreoptic bronchoscope

S K Morcos, P B Anderson, S V Baudouin, C Clout, N Fairlie, C Baudouin, N Warnock

Abstract
The contrast agent Iotrolan 300 has potential advantages for bronchography over previous agents in that it can be injected directly through the bronchoscope and it does not obscure bronchoscopic vision or interfere with further bronchoscopic procedures. It was used for selective bronchography in 20 patients with suspected bronchiectasis. Side effects and change in FEV₁ and arterial oxygen saturation were compared in these patients and in 14 patients undergoing bronchoscopy for suspected carcinoma. Thirteen of the 20 patients undergoing bronchography had side effects, mainly headache, nausea, and a feeling of heat or flushing. The fall in FEV₁ at four hours (0·3 l) did not differ from the fall in the control group (0·1 l). The fall in arterial oxygen saturation (Sao₂) during bronchography (9·4%) did not differ significantly from the fall during bronchoscopy in the control group (6·1%). Iotrolan gave good quality bronchograms, which in all cases provided a diagnosis. Iotrolan appears to be suitable for bronchography by fibreoptic bronchoscope and to be well tolerated.

Bronchography via the fibreoptic bronchoscope has important diagnostic potential.¹ The usual contrast agent used, Dionosil (Glaxo Laboratories, Greenford, Middlesex), has several disadvantages. It is difficult to administer, obscures bronchoscopic vision, and has been shown to compromise lung function.² We report our experience with Iotrolan 300 (Schering AG, Berlin), which, unlike Dionosil, can be injected directly through the bronchoscope's suction channel.³

Results
Thirteen patients (12 of whom) undergoing bronchography had side effects that included headache (five), nausea or vomiting (six), and a feeling of heat or flushing (five). Coughing occurred in three patients after the administration of Iotrolan. Three control subjects (two of them men) developed minor reactions. The bronchographic examination was generally acceptable to the patients, easy to perform, and not time consuming (mean (SD) 15·2 (7·2) min).

Baseline spirometry and the changes over the four hours were similar in the two groups (table). The mean (SD) maximum fall in Sao₂ (baseline − nadir) was 9·4% (4·2%) in the bronchography and 6·1% (3·4%) in the control group. Sao₂ fell below 90% transiently on introduction of Iotrolan in six patients but oxygen administration was not necessary. The quality of the bronchogram was rated as good in 13 patients and excellent in the remaining seven. All bronchograms allowed a diagnosis to be made or excluded (figure) — bronchiectasis in 14 cases and chronic bronchitis in

<table>
<thead>
<tr>
<th>Iotrolan 300 (bronchography)</th>
<th>Control (bronchoscopy)</th>
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<tbody>
<tr>
<td>Forced vital capacity (l):</td>
<td></td>
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<tr>
<td>Baseline 3·25 (0·9)</td>
<td>3·16 (1·12)</td>
</tr>
<tr>
<td>4 hours 2·80 (0·9)</td>
<td>2·97 (0·75)</td>
</tr>
<tr>
<td>Baseline 94·8 (3·13)</td>
<td>93·6 (2·99)</td>
</tr>
<tr>
<td>End of procedure 90·7 (4·92)</td>
<td>93 (4·86)</td>
</tr>
<tr>
<td>4 hours 92·5 (2·24)</td>
<td>92·9 (3·37)</td>
</tr>
</tbody>
</table>

Effect of bronchography and bronchoscopy on spirometric values and arterial oxygen saturation (Sao₂) (means with standard deviations in parentheses)
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Discussion

Intrabronchial Iotrolan 300 did not cause serious side effects. No inflammatory response was seen histologically in a lobe removed five days after bronchography. Saturation and spirometric changes were less than those reported with DionosiI and no greater than those caused by bronchoscopy alone in the control group. Diagnostic bronchograms were obtained in all cases. A dose of 2–3 ml Iotrolan 300 per lung segment is suggested, with a maximum of 25 ml per patient.

Iotrolan 300 appears to be suitable for bronchography and to be well tolerated. The value of the technique is currently being evaluated.

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