dairy farm workers, 24 of which had been collected from the Royal Show at Stoneleigh in 1983 and a further 270 locally in Herefordshire; the rest were part of a survey conducted in Derbyshire by the Health and Safety Executive. Of the 400 sera investigated 15 showed a positive result, indicating past infection. Hardjo anti-

bodies could be detected only at a low titre of 80 to 160. Of the 15 that were positive two were found in the Derbyshire survey and the 13 others in local Herefordshire volunteers. The overall prevalence of antibody in this group was about 4%. In a previous study undertaken in Worcestershire only one case of leptospirosis (icterohaemorrhagiae) was found in 800 sera tested by the microscopic agglutination test. Assuming the procedures used were similar this suggests that cattle associated leptospirosis is a fairly recent phenomenon and that there is a lack of general awareness of the condition in dairymen.

### Lesson of the Week

**Acute respiratory insufficiency from psittacosis**

**M VAN BERKEL, H DIK, J W M VAN DER MEER, J VERSTEEG**

### Introduction

In man psittacosis varies from a mild influenza like illness to a feverish disease characterised by pneumonia and general symptoms. We describe four patients with acute respiratory insufficiency due to psittacosis, which led to the death of three of them.

### Patients

Four patients were referred to our hospital because of respiratory insufficiency due to bilateral pneumonia, necessitating mechanical ventila-

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**TABLE III—Cases of Leptospira serogroup hebdomadis serovar hardjo in 1983**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No</th>
<th>Occupation</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td></td>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Arabic</td>
<td>0</td>
<td>Meat inspectors</td>
<td>1</td>
</tr>
<tr>
<td>Common</td>
<td>25</td>
<td>Butchers</td>
<td>1</td>
</tr>
<tr>
<td>Dairy</td>
<td>17</td>
<td>Veterinarians</td>
<td>2</td>
</tr>
<tr>
<td>Sheep</td>
<td>1</td>
<td>Miscellaneous</td>
<td>7</td>
</tr>
<tr>
<td>Beef</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**References**

1 van der Hoeden J. Leptospirosis. In: van der Hoeden J, ed. Amsterd.: Elsevier


3 Waitkins S. Laboratory diagnosis of leptospirosis. Laboratory Medicine 1983; No 17:178-94.


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**Psittacosis should always be borne in mind as a possible cause of fulminating pneumonia with respiratory insufficiency**

Dairy and beef farmers, and others involved in poultry farming, are at increased risk of infection. The disease is caused by the bacterium Chlamydia psittaci, which is transmitted to humans through contact with affected birds or their excreta. Symptoms include fever, chills, muscle aches, and respiratory distress.

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**Conclusion**

Leptospirosis is not a new disease in the British Isles, but the epidemiological pattern has changed. Today those most at risk from icterohaemorrhagiae infection are farmers and those who pursue water sports. The predominant infecting serogroup of leptospirosis has also changed, with *L. hebdomadis* serovar hardjo now more frequently reported than *L. icterohaemorrhagiae*. Recent studies of the incidence of cattle associated leptospirosis show that at least 4% of all dairy farmers are at risk, but on the whole such infections remain undetected.

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**Deposit**

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treated with serum from non-immune rabbits. The immune adherence haemagglutination test,1 carried out with a commercially available complement fixating antibody (Virion) gave low titres (table). IgM or IgG antibodies were shown with an immunofluorescence assay on slides coated with cells infected with *Chlamydia psittaci* (table). For the IgM test the sera were pretreated to remove IgG and rheumatoid factor with anti-Fey and then absorbed.

### Comment

An unusual feature of our patients with psittacosis was respiratory insufficiency as the presenting symptom. Three of them died of hypoxia, two despite treatment with a tetracycline. Respiratory insufficiency has been described as a cause of death in review articles but well documented case reports have not been published.

The pronounced leucocytosis found in our patients was also unusual, since the number of leucocytes is normal or slightly reduced in psittacosis. A relative bradycardia is often described, but was not seen in any of our patients. In the fourth patient massive haemoptysis was a major feature of his disease. Although the frequency of haemoptysis in psittacosis has been estimated at 11%, which we have not found a report of such a severe case.

Excessive passage of flatus may be due to aerophagy or excessive fermentation of unabsorbed nutrients, usually carbohydrates. The latter may occur in patients with malabsorption usually due to lactase deficiency. Non-steroidal anti-inflammatory drugs commonly lead to diarrhoea or constipation, and even steatorrhoea has been reported. "Flatulence" is a common side effect, however, and few studies specify whether the term means flatus. Only 76 patients of 1500 taking indoprofen (Flosint) admitted to flatulence and only four of these to excessive flatus (personal communication, J Powell, Femar Italia Carlo Erba Limited). The mechanism of production of excessive flatus by Flosint is unknown. Levitt's methods of measuring and analysing flatus distinguish between an aerophagist and a patient with excessive carbohydrate fermentation.1 If this patient does not seem to be an aerophagist or to eat large amounts of cabbage or beans it would seem sensible to stop the drug without any investigations and then to be guided by his clinical progress. —JAMES COX, senior registrar, Hull.

### References


In all cases the diagnosis was based on the presence of inclusion bodies in pneumocytes that were positive for *C. psittaci* antigen with the immunofluorescence test. In our last patient sputum was also tested with this technique and found positive for *C. psittaci* antigen in ciliated cells as well. IgM or IgG antibodies were shown in the sera of all patients, and because of these findings we were able to initiate specific treatment with tetracycline in cases 3 and 4.

These cases illustrate that in patients who present with respiratory insufficiency due to pneumonia the diagnosis of psittacosis should be considered even if there has been no known contact with birds. If possible, chlamydia antigens should be sought for in sputum or biopsy specimens, and sera should be screened for IgM and IgG antibodies. While the results of investigations are being awaited antimicrobial treatment should include a tetracycline preparation.

### A fit man aged 70, apart from some osteoarthrosis, complains of excessive foul smelling flatus which he has had for several months. He passes two or three fairly soft stools a day. He takes twice daily medication of a non-steroidal anti-inflammatory drug, the retard form of which gave him severe diarrhoea for over two days. Is any special investigation indicated?

Excessive passage of flatus may be due to aerophagy or excessive fermentation of unabsorbed nutrients, usually carbohydrates. The latter may occur in a normal individual who eats large quantities of cabbage or beans, or less commonly in patients with malabsorption due to lactase deficiency. Non-steroidal anti-inflammatory drugs commonly lead to diarrhoea or constipation, and even steatorrhoea has been reported.1 "Flatulence" is a less common side effect, however, and few studies specify whether the term means flatus. Only 76 patients of 1500 taking indoprofen (Flosint) admitted to flatulence and only four of these to excessive flatus (personal communication, J Powell, Femar Italia Carlo Erba Limited). The mechanism of production of excessive flatus by Flosint is unknown. Levitt’s methods of measuring and analysing flatus distinguish between an aerophagist and a patient with excessive carbohydrate fermentation.1 If this patient does not seem to be an aerophagist or to eat large amounts of cabbage or beans it would seem sensible to stop the drug without any investigations and then to be guided by his clinical progress. —JAMES COX, senior registrar, Hull.


### Details of patients

<table>
<thead>
<tr>
<th>Patient No</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>33</td>
<td>34</td>
<td>43</td>
<td>62</td>
</tr>
<tr>
<td>Sex</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Duration of symptoms before admission (days)</td>
<td>4</td>
<td>14</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Cough, dyspnoea, fever</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>White cell count (10⁶)</td>
<td>3.2</td>
<td>5.5</td>
<td>3.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Floc (kPa)</td>
<td>4.5</td>
<td>4.5</td>
<td>6.3</td>
<td>2.9</td>
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<tr>
<td>Immunofluorescence test result for chlamydia antigens</td>
<td>positive*</td>
<td>positive</td>
<td>positive</td>
<td>positive†</td>
</tr>
<tr>
<td>IgM antibody titre</td>
<td>64</td>
<td>64</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>Immunofluorescence assay for IgG</td>
<td>not done</td>
<td>not done</td>
<td>&gt;256</td>
<td>64</td>
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</tbody>
</table>

*Postmortem lung tissue. †Lung biopsy specimen. ‡Sputum.