

A pastoral scene featuring a large, leafy tree in the center. Several cows are present: a brown cow on the left, a white cow with brown spots in the middle, and a black and white cow on the right. The background shows rolling green hills under a clear sky.

Leptospirosis

A General Practitioner Perspective

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Te Kuiti Community Hospital & Health Care Centre

- ↖ Hospital Reception
- ↖ + Emergency
- ← Te Kuiti Medical Centre
- ← Te Kuiti Health Pharmacy
- Community Services
- Community Mental Health
- Physiotherapy & Occupational Therapy
- Day Surgery Unit
- Kitchen Services Delivery

Te Kuiti and Districts

- Population 10,000
- 80 km from Hamilton
- District extends to south , west and east
- 50% population live rurally
- Farming - sheep and beef, increasing dairy
- 3 abattoirs - 1 beef
 - - 2 sheep, goats, bobby calves
 - - main urban employers
 - - 600 employees

Aims

- Overview diagnosis and treatment
- Case histories
- Difficulties in diagnosis
- Implications for ACC and work compensation
- A standardised approach to management

Leptospirosis – Clinical Presentation

- Fever > 38 degreesC
- Headache
- Lethargy
- Rigors - (shaking)
- Anorexia, nausea, vomiting
- Skin rash
- Jaundice

Clinical Presentation (con't)

- Brought by someone else
- Not usually sick (younger, male, healthy)
- Male
- Dehydrated
- Wants to stay in bed
- At risk group (farmer, freezing worker)
- Think they may have leptospirosis

Investigations

- Slightly raised White cell count
- Slightly deranged liver function tests
- Creatinine slightly elevated – kidney function
- Blood cultures – rarely done
- Leptospirosis PCR - narrow window
 - - positive approx 50%
- Serology - often negative in early stages
 - - up to 4 weeks for final result
 - - doesn't always rise to definitive levels
 - - may be affected by early treatment

Differential Diagnosis

- Number of illnesses can cause similar picture :
- Influenza
- Glandular fever
- Hepatitis
- Liver infections (cholecystitis)
- Meningitis
- Septicaemia
- Murine typhus

Management

- 50 % suspected cases admitted to hospital
 - symptom control (fever, headache)
 - rehydration
 - IV antibiotics (amoxicillin, ceftriaxone)
 - further investigation for alternative causes

Those managed in the community treated with oral doxycycline with review in 1 – 2 days

Sequelae

- Very variable course
- Most improve in 1 – 2 weeks
- Some take 2 – 3 months – ongoing lethargy and inability to work
- Often 4 weeks to get a definite diagnosis so there is a long period of uncertainty which can have implications for work related compensation (ACC)

Case History 1

- 40 year old male stock agent
- unwell 4 days - concerned about leptospirosis
- No fever or other significant findings
- Rx Doxycycline
- +2 days -high fever, Muscle aches, headache, raised LFTs, normal WCC. PCR done
- +4 days – serum PCR pos.
- 1st sero neg, second Pomona 1:200
- Returns to work 1 week later

Case Hx 2

- 58 year old male sheep and beef farmer
- Unwell 4 days lethargy, fever, headache
- 40 deg C, deranged LFTs (2X n) , dehydrated
- IV fluids, amoxycillin
- PCR positive
- 3 days hospital. Back to work after 10 days
- Serology Hardjo 1:100 @ 2 weeks
1:50 @4 weeks

Declined ACC Cover

Case Hx 3

- 66 year old sheep and beef farmer also doing rat bait stations
- Unwell 4 days, fever (mild), headache.
- +2 days worse. Dehydrated. Abnormal LFTs
 - admit WPH to a surgical ward – cholangitis
 - CT of abdomen
 - IV fluids and Amoxycillin 4 days

Retuned to full work after 1 month

No PCR available (? Performed)

Serology - Canicola 1:400 at 3 weeks

Accepted ACC

Case Hx 4

- 50 year old female freezing worker (offal)
- 24 hr Hx fever, vomiting, rigors
- +3 days admitted hospital with presumed septicaemia. Deranged LFTs
- IV fluids, Ceftriaxone and doxycycline
- +5 days PCR positive
- Off work 1 month
- Hardjo 1:25 at 2 weeks, neg at 4 weeks
- ACC claim not accepted
- + 2months – still tired and finding work difficult

Case Hx 5

- 50 year old male dairy farmer
- Lethargy 2 – 3 days. Mild headache. No fever
- Jaundiced with markedly deranged LFTs
- Rash over trunk and legs
- + day 4 serum PCR positive and urine weakly positive – delay as over Xmas
- IV ceftriaxone 1 week -intollerant doxycycline
- AST and ALT 10 x normal for 1 month then normalised over next month
- Billirubin peaked at 280 around 3 weeks then normal by 2 months

Case Hx 5 (con't)

- All serology negative
- Liver biopsy – non-specific inflammatory changes
- + 10 weeks - no leptospirosis DNA in 1st sample
- - presumed false positive secondary to cross-contamination
- Moderately affected by the illness – light work only
- Declined by ACC

ACC Implications

- Only applies where infection is acquired through occupation
- 4 fold rise in titre or single titre of 1:800
- Takes up to 4 weeks to have the serological proof to submit a claim
- Long period of uncertainty for clinician and patient
- Significant financial implications for the patient
- Positive PCR alone not sufficient – does not identify specific serovars so cannot confidently be attributed to occupational source

? A Standardised Approach

- No clear protocols for diagnosis and treatment
- Large number of mild cases are probably missed
- Opportunities lost to treat illness at the early stages – may increase morbidity
- Reluctant to perform serology in less obvious cases because of the complexity

Proposal

- Low threshold for treatment in at risk groups – farmers, freezing works, veterinarians
- Oral doxycycline for 7 -10 days if fever > 38 and symptoms broadly consistent with leptospirosis
- Low threshold for performing PCR
- Serology only for those have positive PCR or index of suspicion is high

In Conclusion

- Diagnosis can be difficult and results confusing
- Several weeks to make a confirmed diagnosis which is unsatisfactory for both patient and clinician
- Current ACC practice means that some/many people are not receiving appropriate compensation
- Rural clinicians would benefit from a standardised approach to diagnosis and treatment