Table 91: Beltran 1990
### Reference

### Patient characteristics
**Population:** Retrospective case series of participants with suspected foot infection and/or neuropathic joint  
**Number of patients included:** 14 participants  
**Number of patients excluded:** not stated  
**Mean age:** not stated  
**Males/females:** not stated  
**Country:** USA  
**Other comments:** Results were obtained by having investigations examined by experts blinded to the participants clinical findings and other investigations. Results confirmed by follow up.

### QUADAS 2 quality assessment
**Patient Selection: could the selection of patients have introduced bias?**  
1) Was a consecutive or random selection of patients enrolled?  
Unclear if a random selection of participants was enrolled, or if patients were recruited consecutively  
2) Was a case-control study design avoided?  
Yes  
3) Did the study design avoid inappropriate exclusions?  
Unclear  
**Could the conduct or interpretation of the index test have introduced bias?**  
4) Were the index test results interpreted without knowledge of the results of the reference standard?  
Yes  
5) If a threshold was used, was it pre-specified?  
No threshold appears to have been pre-specified  
**Could the reference standard, its conduct, or its interpretation have introduced bias?**  
6) Is the reference standard likely to correctly classify the target condition?  
The reference standard was the subsequent follow up and development of symptoms of infection or Charcot features on plain radiograph, these are likely to be accurate  
7) Were the reference standard results interpreted without knowledge of the results of the index test?  
The reference standard results were not interpreted without knowledge of the results of the index test  
**Could the patient flow have introduced bias?**  
8) Was there an appropriate interval between index test and reference standard?  
There was an appropriate interval between index test and reference standard  
9) Did all patients receive the same reference standard?  
All participants received the same reference standard.  
10) Were all patients included in the analysis?  
Unclear if all participants who could fit the inclusion criteria were included, unclear inclusion criteria.
### Reference standard

**Reference standard:** long term follow up and development of disease  
**Details:** Not provided  
**Number unable to participate in the reference test:** Not stated

### Index test(s)

1. **Plain radiograph**  
**Test:** two experienced examiners blinded to the results of the other tests and clinical findings  
No further details provided  
**Number unable to participate in the index test and reasons given:** Not stated

2. **Magnetic resonance imaging**  
**Test:** two experienced examiners blinded to the results of the other tests and clinical findings  
1.5 Tesla magnet  
**Number unable to participate on the index test and reasons given:** Not stated

### Results

**Plain radiograph** - number of participants with Charcot neuroarthropathy diagnosed (n=5). Results calculated from data provided  
Neuropathic joint was diagnosed with observation of joint collapse, subluxations and dislocations, bone sclerosis and bone fragmentation well manifested on plain film.

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<td>0 (FP)</td>
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<td>-</td>
<td>3 (FN)</td>
<td>9 (TN)</td>
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<td><strong>Total</strong></td>
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Sensitivity: 0.400 (95% CI: 0.000, 0.929); Specificity: 1.000 (95% CI: 0.944, 1.000)  
LR+: 8.333 (95% CI: 0.480, 144.823); LR−: 0.600 (95% CI: 0.293, 1.227)
**Magnetic Resonance Imaging, MRI** - number of lesions consistent with Charcot neuroarthropathy (n=39). Results calculated from data provided (excluding 3 participants with extensive metal artifacts interfering with detection)

Neuropathic joint was diagnosed with observation of irregular destruction of the subchondral corticies of a joint accompanied by low signal intensity of the underlying trabecular bone.

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Sensitivity: 1.000 (95%CI: 0.900, 1.000); Specificity: 1.000 (95%CI: 0.944, 1.000)
LR+: 18.333 (95%CI: 1.227, 274.024); LR−: 0.088 (95%CI: 0.006, 1.241)

**Summary**

MRI was found to be accurate in detecting and differentiating between neuroarthropathy and osteomyelitis and superior to plain radiography in the detection of Charcot foot.