

## **Sp12: Should culture for pyogenic organisms and fungal organisms be performed in all patients with suspected spinal tuberculosis?**

### **Authors:**

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### **Recommendation:**

Based on available data, there is a Moderate to high level evidence to suggest that culture for pyogenic organisms performed in all patients with suspected spinal tuberculosis.

There is a Moderate to low level evidence that fungal organisms should be tested for in cases with immuno-compromised status, there is a low evidence that fungal organism should be tested in all cases of spondylodiscitis.

### **Level of Evidence:**

*High = Further research is very unlikely to change our confidence in the estimate of effect.*

*Moderate = Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.*

*Low = Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.*

*Very low = Any estimate of effect is very uncertain.*

### **Delegate Vote:**

### **Rationale:**

Tuberculosis of spine is common in developing and underdeveloped countries(1). It was considered as the most likely diagnosis in spondylodiscitis and empirical ATT based on clinicoradiological diagnosis was considered appropriate earlier(2). However, soon it was pointed out that purely by clinical and radiographic findings, tuberculous spondylitis may be impossible to differentiate from other causes of spondylodiscitis like pyogenic or fungal vertebral osteomyelitis(3). Some primary or metastatic tumors including myeloma and lymphoma can also mimic tubercular spondylodiscitis. Current guidelines state that biopsy and tissue diagnosis is essential for isolating the organisms and tissue diagnosis by histopathological examination(4,5,6,7).

Several studies have pointed out that biopsy materials should be sent for both mycobacterium tuberculosis as well as bacterial culture and sensitivity for pyogenous spondylodiscitis. In addition recently there are some cases of brucellosis, fungal and anaerobic organisms and hence there is an opinion that these also need to be tested from the biopsy material. Undertaking comprehensive cultures can significantly affect treatment strategies and outcomes. TB treatment typically involves multiple drugs administered for six to twelve months, whereas a pyogenic infection might be adequately managed with six to eight weeks of antibiotics. Fungal infections, such as Candida or Aspergillus, may necessitate prolonged antifungal regimens and potential surgical debridement. Prescribing the wrong regimen leads to wasted time, potential drug toxicity, and disease progression. Therefore, by confirming or excluding TB and identifying other pathogens, clinicians ensure that patients receive precisely targeted therapy as early as possible.

In a study dating back to 1977 in Sweden(9), 82 cases of pyogenous spondylodiscitis were identified and authors mention that there is a change in trend towards pyogenous spondylodiscitis from tuberculous spondylodiscitis. In the developing countries too the same was evident. Aithala J P et al (8) identified 34 cases of pyogenous spondylodiscitis in 63 patients with clinicoradiological diagnosis of spondylodiscitis.

Bilgul Mete et al(10), identified 44 pyogenous, 24 brocellosis, 32 tubercular infections. Buchelt M et al (11) identified that 62.2% cases a clear distinction of pyogenous or tubercular spondylodiscitis was possible in 91 cases. YEE DK et al in their study of 91 patients, identified increasing cases of pyogenous spondylodiscitis in chinese population with Overall, tuberculous spondylitis and pyogenic spondylitis entailed 22 (24.2%) and 69 (75.8%) cases, respectively. Thus most of these studies highlight that there is an increasing trend in pyogenous spondylodiscitis. Hence, treating all patients with antitubercular treatment is not justified.

Fungal organisms account for about 0.5-1.6% spondylodiscitis(13). Fungal infections are common in immunocompromised patients which include steroid use, neutropenia, IVDA etc. The IDSA guidelines(14) highlight that fungal organisms should be tested in case of impaired immunity. However, for routine testing no sufficient literature data is available, and most of the literature available are isolated case reports or case series. (15,16). Hence fungal cultures can be considered in immunocompromised patients or in case pyogenous and tubercular spondylodiscitis are ruled out. A clear guideline on routine testing for fungal organism is not available.

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