

## Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the incidence of spinal tuberculosis (TB) in the United States between 2002 and 2011

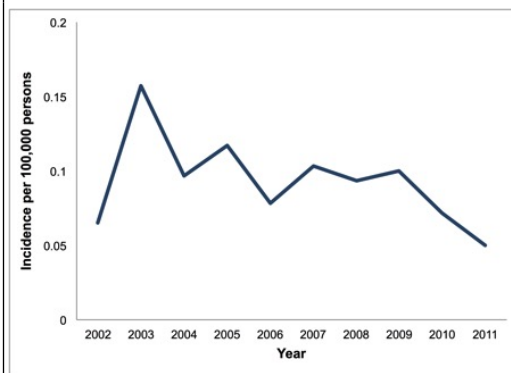
## Introduction

Spinal tuberculosis (TB) is a known cause of spinal deformity and paraplegia. However, there is limited data on the prevalence of Pott's disease in the United States.

## Methods

The Nationwide Inpatient Sample database from 2002 to 2011 was used to identify patients with a discharge diagnosis of TB and spinal TB. Demographic and hospital data was obtained for all admissions, which included age, gender, race, comorbid conditions, insurance status, hospital location, hospital teaching status, and hospital region. The population growth-adjusted incidence rate of spinal TB was calculated after application of discharge weights.

**Figure 1: Population growth-adjusted incidence rate of patients with a discharge diagnosis of spinal tuberculosis in the United States from 2002 – 2011**



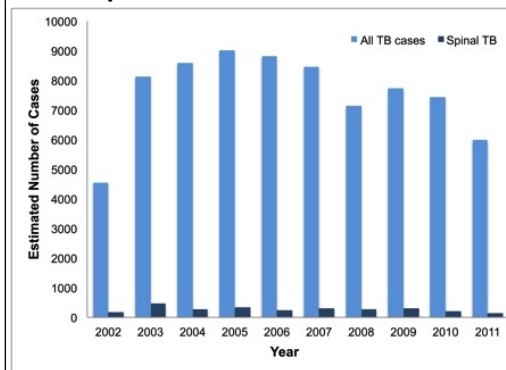
## Results

A total of 75,858 patients with a diagnosis of TB were identified, out of whom 2,789 had a diagnosis of spinal TB (3.7%); an average of 278.9 cases per year between 2002 and 2011. The incidence of spinal TB decreased significantly from 0.07 cases per 100,000 persons in 2002 to 0.05 cases per 100,000 in 2011 ( $p < 0.001$ ), corresponding to 1 case per 2 million persons in the latter year. The median age for patients with spinal TB was 51 years, and 61% were male; 11.6% were diabetics, 11.4% reported recent weight loss, and 8.1% presented with paralysis. There were 619 patients who underwent spinal surgery for TB, with the most common location being the thoracolumbar spine (61.9% of cases); 50% of patients had instrumentation of 3 or more spinal segments.

## Conclusions

During the examined 10-year period, the incidence of spinal TB was found to significantly decrease over time in the United States, reaching a rate of 1 case per 2 million persons in 2011. Though uncommon, spinal TB remains a public health concern, most commonly affecting male patients around 50 years of age. Approximately 20% of patients with spinal TB underwent surgery, most commonly in the thoracolumbar spine.

**Figure 2: Proportion of patients with spinal TB from all TB cases**



**Figure 3: A 21-year old female presented with a severe kyphotic deformity of the thoracic spine and mild paraparesis secondary to TB**



Left: Preoperative CT scan of the thoracic spine shows destruction of T7, T8, and T9, with severe focal kyphosis. Right: Preoperative T2-weighted MRI showing focal kyphotic deformity and spinal cord compression.

## References

1. Tuberculosis (TB) Data and Statistics, in: Centers for Disease Control and Prevention, 2015, Vol 2016
2. Boachie-Adjei O, Papadopoulos EC, Pellise F, Cunningham ME, Perez-Grueso FS, Gupta M, et al: Late treatment of tuberculosis-associated kyphosis: literature review and experience from a SRS-GOP site. *Eur Spine J* 22 Suppl 4:641-646, 2013
3. Brashear HR, Rendelman DA: Pott's paraplegia. *South Med J*:1379, 1978
4. Bydon M, De la Garza-Ramos R, Macki M, Desai A, Gokaslan AK, Bydon A: Incidence of sacral fractures and in-hospital postoperative complications in the United States: an analysis of 2002-2011 data. *Spine (Phila Pa 1976)* 39:E1103-1109, 2014
5. Chen WJ, Wu CC, Jung CH, Chen LH, Niu CC, Lai PL: Combined anterior and posterior surgeries in the treatment of spinal tuberculous spondylitis. *Clin Orthop Relat Res*:50-59, 2002