

Pulmonary *Nocardia* Infections in Patients with COPD Carry a Potential Risk of Dissemination to the Brain

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Received: June 21, 2019; **Published:** July 31, 2019

“What is often overlooked as concerns Pulmonary Nocardiosis in COPD Patients, is that the *Nocardia* abscesses have the ability to extend through the chest wall. The *Nocardia* infection can disseminate via the bloodstream causing brain abscesses”.

Nocardia asteroides is a major causative agent of Pulmonary Nocardiosis. This organism and other members of the *Nocardia* Genus are filamentous, gram positive, and acid-fast when decolorized with 1% (v/v) sulfuric acid [1-5]. Pulmonary *Nocardia* infection is characterized by the presence of abscesses in the lungs [1-4].

The occurrence of Pulmonary *Nocardia* infections are infrequent, but are commonly seen in patients that are immunocompromised [1]. Infections that are associated with Pulmonary *Nocardia* Disease are severe and carry with them a high rate of morbidity and mortality [2].

The occurrence of *Nocardia* infections are associated with several points of risk namely: bronchiectasis, corticosteroid therapy, cystic fibrosis, and chronic obstructive pulmonary disease (COPD) [1].

Chronic Obstructive Pulmonary Disease is called a point of risk for acquiring a Pulmonary *Nocardia* infection because it is linked to a scenario wherein there is a reduction in respiratory defenses, which are associated with the prolonged utilization of steroid therapy [3].

In patients with COPD, the Pulmonary *Nocardia* scenario is most frequently associated with a patient that is “immunocompetent” rather than the usual immunocompromised patient which is usually seen in *Nocardia* infections [1]. Physicians must always consider the possibility of a potential *Nocardia* infection in COPD patients [1].

What is often overlooked as concerns Pulmonary Nocardiosis in COPD Patients, is that the *Nocardia* abscesses have the ability to extend through the chest wall [4]. The *Nocardia* infection can disseminate via the bloodstream causing brain abscesses. *Nocardia* organisms have a predilection for brain tissue [4,5]. “One-third of the reported cases develop brain abscesses” if left untreated or if treatment is delayed [4, 5]. Symptoms associated with brain abscesses may “include severe headache, focal, sensory and motor disturbances” [4].

“*Nocardia* infections are, however, quite severe, they carry the highest mortality rate among all bacterial cerebral abscesses, with mortality rates as high as 55% and 20% in immunocompromised and immunocompetent patients, respectively” [5].

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Volume 8 Issue 8 August 2019

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