Abstract:

Melioidosis or Whitemore disease is caused by a motile, aerobic non spore forming bacillus called Burkholderia Pseudomallei. It is highly infectious by inhalation and resistant to routine antibiotics. As such it is considered a potential biological weapon specially in aerolised form and classified under CBRNE. The disesase is endemic to Australia and South East Asia. Cases have been reported from China , Middle East and India. In India cases have been mostly found in the Southern part but also reported from North East. Here we present a case of Melioidosis which did not respond to Meropenem.

Case:

- A 47 year old male patient, recently diagnosed T2 Diabetes Mellitus and no other co morbidities, presented to Orthopedics OPD with complains of left knee swelling and pain for last 6 days. He had a history of trauma to the left knee 20 days back. USG showed signs of Popliteal vein thrombosis. Patient was admitted in ward for further management.
- On examination patient was found to be conscious, oriented, febrile (T – 100.7 F) , hypoxic (SPO2 – 88% in room air) , with tachycardia (heart rate – 112 per min) with a BP of 113/73 mm of Hg. Chest auscultation did not reveal any wheeze, crepitation or other added sounds. Patient was put on Piperacillin Tazobactum 4.5 g i/v tds. Supplemental Oxygen by face mask was given to maintain SPO2 > 94% . He did not have any further febrile episode the first day.
- Left lower limb Doppler did not show any DVT however effusion around the knee was noticed.
- MRI left knee raised concern for either marrow edema left tibia or early bone infarcts.
- 2D ECHO showed an EF of 55% , normail chambers and valves , no RWMA or PAH were detected.
- Cardiology and Intervention Radilology opinion was taken.
- On second day of admission, patient developed tachycardia, tachypnea, hypoxia and hypotension . CTPA was done and patient was admitted in ICU. In ICU patient was found to be conscious, oriented , HR 130/min, BP 80/40 mm/Hg, RR 37/min, SPO2 76% with 5l O2 by facial mask. His lab reports showed high Total count, AKI and deranged LFT. He was put on mechanical ventilator and high inotropic support. CTPA showed no Pulmonary Embolism

however showed bilateral infiltrates and raised query for pulmonary metastases. Antibiotics were escalated according to our antibiotics policy. Injection Meropenem 1 g i/v TDS was started. He was also put on injection Doxycycline 100 mg i/v BD and tablet Oseltamivir 75 mg BD. Patients total count was found to be in increasing trend with a high PCT level. Injection Polymyxin B 7.5 lu BD , injection Daptomycin 350 mg OD and injection Anidulafungin 100 mg OD was added. USG abdomen showed hepatomegaly, right sided pleural effusion and mildly bright kidneys. Tests for Dengue, Leptospira, Scrub Typhus and Urine culture came negative. ET secretion culture showed CONS. Gradually the shock resolved and counts decreased although patient had intermittent spikes of fever throughout this period. Oxygen equirement was still high. Patient consciousness was poor with GCS of E1VtM4. EEG showed diffused slowing and MRI brain showed previous gliotic lesion. Blood culture came positive for B. Pseudomallei and he was started on injection Ceftazidime Avibactum 2.5 g TDS and injection Meropenem was stopped. Patient GCS improved and Oxygen requirement also decreased. On 4th day of starting Ceftazidime patient was successfully weaned off from ventilator and extubated. By the time of extubation all antibiotics and antifungal except for Ceftazidime was stopped.

Discussion:

Melioidosis is an infectious disease caused by Burkholderia Pseudomallei. It is found in soil and water in tropical regions. Human infection occurs by direct contact with contaminated source. Many cases are found during rainy season and floods. Diabetes, alcoholism and immunosuppressive conditions are risk factors. Incubation period can vary from days to months to years. It has a mortality rate of upto 90% if disseminated septicemia is present. Patients can present with acute or localized infection, pulmonary infection, bloodstream or disseminated infection. Sub clinical infection are also found. Multiple organs and bone and joint involvements and skin abcesses may also be found. Ceftazidime remains treatment of choice. arbapenems have been successfully used for treatment in instances of Ceftazidime resistance. Our patient presented with joint pain and effusion progressing to a disseminated disease involving the lungs and with neurological manifestations. This patient however responded poorly to Meropenem and once Ceftazidime was introduced, he had a rapid recovery.

Conclusion:

Melioidosis can present in a variety of forms with local to systemic infections. Without proper demonstration in cultures it is difficult to diagnose specially in resource limited areas. As such many cases may have gone undiagnosed. Added to this the disease is not sensitive to typical or usual antibiotics that are routinely used. Most of the cases are sensitive to Ceftazidime and in resistance to it both Meropenem and Imipenem have been successfully used for treatment.

References:

1. Raja NS, Ahmed MZ, Singh NN. Melioidosis: An emerging infectious disease. J Postgrad Med. 2005;51:140–5. [PubMed] [Google Scholar]
2. Anuradha K, Meena AK, Lakshmi V. Isolation of Burkholderia pseudomallei from a case of septicaemia: A case report. Indian J Med Microbiol. 2003;21:129–32. [PubMed] [Google Scholar]
3. Jesudason MV, Anbarasu A, John TJ. Septicaemic melioidosis in a tertiary care hospital in south India. Indian J Med Res. 2003;117:119–21. [PubMed] [Google Scholar]
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3125033/
5. Medscape

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