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RESEARCH ARTICLE

WHY MUCORMYCOSIS (BLACK FUNGUS) CAN NOT BE DECLARED AS EPIDEMIC IN INDIA

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Abstract

While the whole world is under attack of a second wave and of a more severe potent mutant form of SARS CoV-2 virus causing SEVERE COVID 19 PNEUMONIA pandemic ,a new disease is on the verge of getting declared as an epidemic named MUCORMYCOSIS OR "BLACK FUNGUS" (in common term). MUCORMYCOSIS is an umbrella term used for an opportunistic infection caused by several fungi belong to GLOMEROMYCOTAFAMILY(mucor, zygomucor,lichtheimia,syncephalastrumetc) these saprophytic fungi can be found in soil,food damped walled in the environment which were actually considered as an non pathogenic organism to human. In current days it has become an emerging disease in the world especially in india. Now the "COVID ASSOCIATED MUCORMYCOSIS" has raised a severe threat and fear in india during these second wave of CORONAVIRUS INFECTION.Due to irrational use of the drug PREDNISOLON OR DEXAMETHSONE(which basically belong to steroid group of drugs) for the management of COVID 19 AQUURED PNEUMONIA;MOR,ESPECIALLY FOR THOSE WHO ARE ON HIGH O2 REQUIREMENT has raise 2 issues;one is improper glycemc control,second is severe immunosupressant stage HERE IS A CASE REPORT THAT CAN PROVE THAT CASES OF MUCORMYCOSIS WERE INEVIDENTLY PRESENT IN INDIA EVEN BEFORE THIS PANDEMIC STARTED. A 40 years old male,a cotton mill worker ,was admitted in the emergency observation ward OF IPGME&R AND SSKM HOSPITAL,KOLKATA AROUND THE MONTH OF OCTOBER IN 2018 with random blood glucose level(RBS) 702 gm/dl along with a history of necrotic oral ulcer over the hard pallete extending posteriorly along with left sided nasal blockage with complaint of difficulty to eat and swallow both liquid and solid and rhinolalia since 45 days. There was no history of fever,cough,haemoptysis,no history of trauma to the affected site or tuberculosis. At this point with a high RBS and elevated urea creatinin level patient was diagnosed to be in diabetic ketoacidosis and he was managed with iv. Insuline and hence forth his blood glucose level was kept under control with insulin therapy. While taking the history it came into our notice that the patient is a known case of type 2 diabetes mellitus and CKD-STAGE V due to IgA Nephropathy for which he was receiving Prednisolon which he suddenly discontinued 15 days

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before admission and he also underwent haemodialysis twice. On local examination he had a necrotic ulcer over the hard palate and necrotic debris in the nasal cavity (as evident in the nasal endoscopy). CT —nose+PNS showed left sided maxillary antrum opacity suggestive of pansinusitis. All broad spectrum antibiotics along with iv voriconazole was started as the patient was immunocompromised. After 2 days of his admission though his diabetes was under control patient suddenly showed orbital involvement and visual impairment on the left eye. A repeat CT showed progression of the sinusoidal opacity toward the retro orbital space and a bulky oedematous left inferior rectus due to inflammation and then he was referred to microbiology department with a suspicion of mucormycosis. Scraping material was collected from the oral ulceration site and KOH mount was done? broad aseptate hyphae with acute angle branching? Suggestive of mucormycosis and culture was done in SDA and SDCA media. Culture growth revealed abundant, erect mycelium (around 0.5cm tall). The surface colour of the colony was at first white to yellow, after a few days the centre turned black?. Lactophenol cotton blue (LPCB) stain from the growth showed wide ribbon like aseptate hyphae with sporangioophores terminated in swollen vesicles with radial merosporangia with spores. A confirmed diagnosis of Rhino orbital zygomycosis due to *Syncephalastrum racemosum* was made. The patient was put on intensive short acting insulin to achieve optimum glycemic control. As there was high risk of vascular invasion of mucormycosis (which is the most common mode of pathogenicity of these group of fungi) leading to sudden stroke following ischemia a surgical debridement was done and infected tissue was removed. He was put on intravenous liposomal Amphotericin B 300mg daily OD and later shifted to take voriconazole 200 BD. The patient got discharged in favourable condition. Now literature shows Fluconazole, voriconazole, and itraconazole do not have reliable activity against mucormycosis. DRUGS OF CHOICE should be Liposomal amphotericin, Amphotericin B lipid complex, Posaconazole, Echinocandins, Deferasirox. In recent scenario during the pandemic many COVID 19 positive patients are getting advices from tele medicine or video consultation or many patients are self medicating themselves learning from various social media in India. Now the taking drugs like prednisolone without proper monitoring and sudden discontinuation of the drug once the patient is feeling better is giving rise to stage of absolute lack of circulating neutrophils causing either pulmonary, or rhinocerebral or rhino orbital mucormycosis in those patients even after recovering from COVID 19 INFECTION. The HRCT CHEST of those patients with pulmonary mucormycosis is very difficult to differentiate from the ground glass opacity formed in the lungs caused by COVID 19 PNEUMONIA. So unsupervised intake of steroids or prolonged use of steroids along with improper use of antifungals are causing the rise of this opportunistic infection in India which is increasing rate of fatality.

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Introduction:-

While the whole world is under attack of a second wave and of a more severe potent mutant form of SARS CoV-2 virus causing SEVERE COVID 19 PNEUMONIA pandemic, a new disease is on the verge of getting declared as an epidemic named MUCORMYCOSIS OR "BLACK FUNGUS" (in common term).

MUCORMYCOSIS is an umbrella term used for an opportunistic infection caused by several fungi belong to

GLOMEROMYCOTAFAMILY(mucor, zygomucor,lichtheimia,syncephalastrumetc) these saprophytic fungi can be found in soil,food damped walled in the environment which were actually considered as an non pathogenic organism to human. In current days it has become an emerging disease in the world especially in india.

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