

Fungi	Characteristics	Disease	Risk group	Diagnosis	Treatment
<b>Cryptococcus neoformans</b>	<ul style="list-style-type: none"> <li>- <b>encapsulated yeast</b> that inhabits soil around pigeon roosts.</li> <li>- capsule is antiphagocytic.</li> <li>- Reservoir is birds.</li> <li>- Neurotropic</li> </ul>	<ul style="list-style-type: none"> <li>- Infection of <b>lungs</b> leads to cough, fever, and lung nodules.</li> <li>- <b>Dissemination to meninges</b> and brain can cause severe neurological disturbance and death</li> </ul>	<b>AIDS, cancer, diabetes patients, pregnant women</b>	<b>Microscopic:</b> <b>India Ink for capsule stain</b> (50-80% + CSF) <b>culture:</b> -Bird seed agar (selective) -Routine blood culture <b>PCR</b>	
<b>Aspergillus fumigatus</b>	Very common airborne soil fungus	spores germinate in lungs and form <b>fungal balls (aspergilloma)</b> ; can colonize <b>sinuses, ear canals, eyelids, and conjunctiva</b> . <b>Bronchopulmonary allergy or Invasive aspergillosis in preformed cavities</b> can produce <b>necrotic pneumonia, and infection of brain, heart, and other organs</b> .	<b>AIDS, leukemia, and transplant patients</b>		<b>Surgery</b> (antifungal medications are not effective against fungal balls), <b>Amphotericin B</b> and <b>nystatin</b>
<b>Zygomycosis (mucormycosis)</b>	<ul style="list-style-type: none"> <li>- extremely abundant saprophytic fungi found in soil, water, organic debris, and food</li> <li>- main host defense is phagocytosis</li> </ul>	<ul style="list-style-type: none"> <li>- Rhinocerebral mucormycosis: invade the membranes of the <b>nose, eyes, heart, and brain</b></li> <li>- Very poor prognosis</li> </ul>	<b>diabetes and malnutrition</b>	direct smear and by isolation of molds from respiratory secretions or biopsy specimens.	Control Diabetes ,surgery & amphotericin B
<b>Pneumocystis jirovecii</b>	-initially thought to be parasites	lethal pneumonia in immunocompromised persons	AIDS patients	-finding organisms of typical morphology in appropriate specimens (Sputum, BAL). - can't be cultured in the lab.	TMP-SMX
<b>Histoplasma capsulatum (endemic mycosis)</b>	-Dimorphic fungus with conidia and yeast forms at body temperature and	-asymptomatic /subclinical, benign.. Flu-like syndrome.		- Histoplasmin skin test is significant in diagnosis	

	<p>hyphae &amp; macroconidia in vitro culture.</p> <ul style="list-style-type: none"> <li>- Common in soil enriched with excreta of birds.</li> <li>- Endemic in southern U.S.A, Australia.</li> <li>- not encapsulated</li> <li>- obligate intracellular parasites (phagocytosed by macrophages).</li> </ul>	<ul style="list-style-type: none"> <li>- Few may develop chronic <b>progressive lung disease</b>..</li> </ul> <p>Granuloma &amp; fibrosis, chronic cutaneous or systemic disease involve any internal organ..</p> <p>Fatal systemic disease.</p>		<p>(unique to H. capsulatum)</p> <ul style="list-style-type: none"> <li>- histoplasma antigen found in blood and urine is significant</li> </ul>	
<p><b>Coccidioides immitis &amp; Blastomyces dermatitidis (endemic mycosis)</b></p>	<ul style="list-style-type: none"> <li>- soil inhabiting Dimorphic Fungus.</li> <li>- Endemic in south-western U.S.A., northern Mexico and various parts South America (mainly found in desert environments).</li> </ul>	<p>acute infection in healthy (not very significant for C. immitis, but can be fatal for B. dermatitidis).</p> <p>Some individuals the disease may progress to a chronic <b>pulmonary</b> condition or a <b>systemic disease</b> involving the meninges, bones, joints, subcutaneous, cutaneous tissues</p>		<ul style="list-style-type: none"> <li>-Antigen Skin test positive, Not significant in diagnosis.</li> <li>-serology is not significant in diagnosis</li> <li>-C. immitis, when viewed microscopically have an appearance of conidia in a bag, which is unique to it.</li> <li>-SDA (<b>Sabouraud dextrose agar</b>) are used to differentiate based on morphology.</li> </ul>	
<p><b>Paracoccidioides brasiliensis (endemic mycosis)</b></p>	<ul style="list-style-type: none"> <li>-thermally dimorphic fungal agent which is confined to endemic regions of Central and South America, can be found in immigrants/tourists in southern USA.</li> </ul>	<ul style="list-style-type: none"> <li>- initial lesions occur in the lung. After a period of dormancy that may last for decades, the pulmonary granulomas may become active, leading to chronic, progressive pulmonary disease or dissemination.</li> <li>- Typical presentations similar to coccidioidomycosis immitis</li> </ul>			

Done by: Leen Hajeer