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Screening snail fauna for determination of their role in trematode transmission

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Snails belong to a large and highly different group of invertebrate that act as intermediate hosts of different trematode parasites which complete some developmental stages such as sporocyst, rediae and cercariae that are ready to infect the definitive host. The ratio of snails that discharge cercariae (prevalence of infection) & each infected snail can release the number of cercariae (intensity of infection) play significant roles in the transmission of trematodes from the snail host Arijo *et al.*, (2005). There are many species of snails that play vital role in trematode transmission. Only Lymnaea group of snails is involved in establishing of life cycle in at least 71 species of trematodes. Other species of snails also transmit various trematode parasites of livestock and birds. For example, *Indoplanorbis exustus* (a species of snail) is responsible for the transmission of *Schistosoma nasale*, *Schistosoma spindale* and *Schistosoma indicum I* (all trematodes) as well as other trematodes such as *Echinostoma spp.* and some spirorchids (bacterium). There are many biotic and abiotic factors that pay role in transmission. Age and size of snails, light conditions, temperature ranges, and depth of water are some of the dynamics that appear to affect the prevalence and intensity of digenetic trematode infections in the snail intermediate hosts (Tigga *et al.*, 2014).

The intermediate host snails in general is an essential stage in the life-cycle many trematode parasite species. Cercariae that originate from snails infected cyst spores, the second infect susceptible snail intermediate host through migration to the kidneys of snail where they develop and grow to form meta-cercariae (Subba-Rao, 1993). *Bulinus* is a genus of small tropical freshwater snails. They are aquatic gastropod mollusks in the family Planorbidae. This genus is known to transmit pathogens to both humans and their livestock. Several species of *Bulinus* snail function as intermediate hosts for the Schistosomiasis, which is caused by unisexual trematode which lives in blood vessels of the victim (Kiran *et al.*, 2013). *Oncomelania* is a genus of very small tropical freshwater snails. They are aquatic gastropod mollusks in the family Pomatiopsidae. they can carry the Schistosomiasis blood fluke parasite, and the paragonimus lung fluke parasites. The miracidia reproduce asexually through sporocyst stages within these intermediate hosts, resulting in the production of many free-swimming cercariae (Riley *et al.*, 2008).

Identification of species and evaluation drug susceptibility of *Candida* isolated from patients with visceral candidiasis by disk diffusion and micro-dilution methods

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Background: In recent years, the ubiquity of *Candida* infections by isolates resistant to common drugs and lack of proper diagnosis leads to failure in treatment. Considering the existence of the sensitivity pattern determinable for *Candida* isolates, to select the appropriate drug, it is essential to use the methods of determining the drug sensitivities of fungal agent. Therefore, we decided to study several anti-fungal drugs by using the disk diffusion and micro-dilution method against *Candida* species to consider.

Methods: In this study, 48 clinical isolates of *Candida* were identified using various different tests such as germ tube, culture on CHROM agar candida, cornmeal agar-Tween 80 and PCR. Their susceptibility test on amphotericin B, Miconazole, econazole, fluconazole and caspofungin was undertaken according to the standard Disk Diffusion CLSI- M 44 A and CLSI M27A3 for micro-dilution.

Results: The survey found that 98% of *Candida* studied was sensitive to amphotericin B, 85% were sensitive to Miconazole, 85% to econazole, 69% were sensitive to fluconazole and 100% of isolated were susceptible to caspofungin. No resistance to amphotericin B and caspofungin was observed and a few isolates were resistant to Miconazole, econazole and fluconazole respectively and some isolates showed dose dependent susceptibility.

Conclusion: We observed that the *Candida* studied had the highest rates of sensitivity to caspofungin and amphotericin B. Among azoles the highest sensitivity respectively are to Miconazole, econazole and then to fluconazole. *Candida albicans* has the highest sensitivity to caspofungin and amphotericin B and also has a high sensitivity to fluconazole, Miconazole and econazole.