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SCIFORUM-082731 " Spirulina Platensis As "ANTIFUNGAL Agent" - A Prospective In vitro Analysis"

Dr. Dineja R, Dr.Divya .B, Dr.Vasanthi ,Dr.Madhu., Dr. Rajkumar, Dr .Savithri ., SRM Dental College., Chennai ., Tamilnadu ., India

antibiotics MDPI

Aim: Antifungal property with minimal inhibitory concentration of *Spirulina Platensis* is evaluated against Candida albicans and also to find the zone of inhibition for *Spirulina Platensis* against Candida albicans& Candida glabrata

Materials and Methods: Dry powder of Spirulina and Extract is prepared with ethanol, Zone of inhibition was determined by Well diffusion method , MIC was determined by Agar dilution method

Extract preparation

2 gram- dry powder (Spirulina plantensis)

- 10 ml of methanol.

Mixture is agitated → 60 minutes @ 25°C

- For every 15 minutes the agitation is interrupted by adding 10 ml of methanol.

After 60 minutes the content was filtered

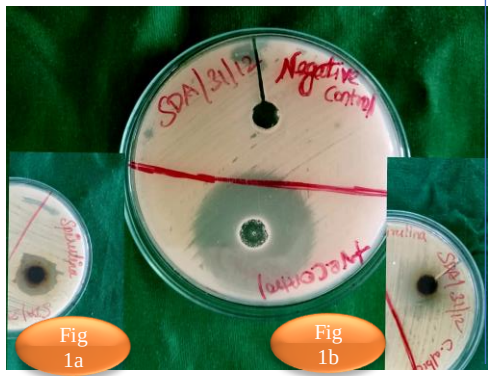
- Filter powder is now washed with 20 ml of hexane. Procedure is repeated twice.

evaporated in hot air oven @ 40°C & dissolved - 25 ml of distilled water

Extract is used

Well Diffusion method for Zone of Inhibition

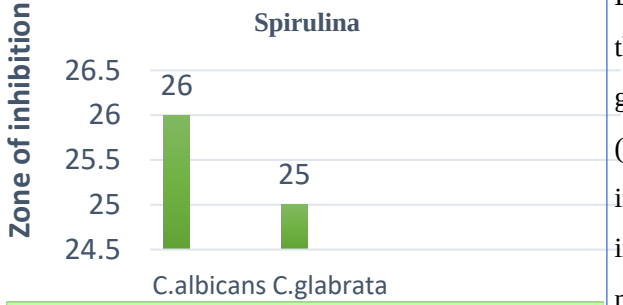
100 ml →candida albicans – Sabouraud Chloramphenicol agar media, 100 ml → candida glaberata media Differential Agar base., Well of 4mm is created &1000µl of spirulina extract→C albicans& glabrata plates

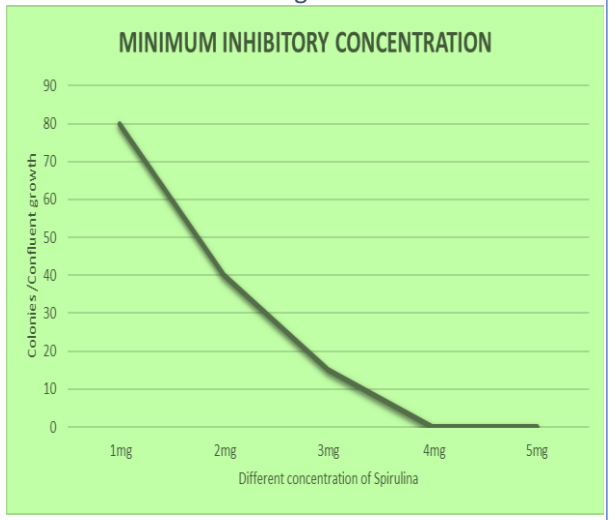


Agar Dilution Method

Culture plates mixed with 5 different concentrations of 1, 2, 3, 4, 5 mg of ethanolic extract of spirulina Candida albicans suspension were streaked on culture plates. The medium was inoculated and incubated for 48 h at 37°C.

Results





Statistical analysis was done using SPSS software "Kruskal -Wallis" test was used. The H statistic is 22.5212(4, N=25). P value is 0.00016. the significant at $p<0.05$.

Discussion

Lowest concentration of spirulina(1 mg) showed the 80 colonies / confluent growth and finally no growth is seen in 4 and 5 mg of concentration (fig2). The number of colonies decreased with increased concentration. For spirulina zone of inhibition is observed for Candida albicans of 26 mm(fig1a) ZOI and for C glabrata spirulina showed ZOI of 25 mm(fig1b). Spirulina has antifungal property against C albicans and C galbrata. So in case of routine antifungal resistance candidiasis cases traditional herbs can give hand to overcome the situation.

Conclusion

- ✓ Increase in fungal pathogens,
- ✓ Limited therapeutic options,
- ✓ Side effects of therapeutic drug, and
- ✓ Emergence of MDR

To over come these spirulina can be used

Reference

Marangoni, Antonella et al. "In vitro activity of Spirulina platensis water extract against different Candida species isolated from vulvo-vaginal candidiasis cases." PloS one vol. 12,11 e0188567. 30 Nov. 2017