CANDIDA DUBLINIENSIS VIRULENCE: COMPARISON WITH OTHER CANDIDA SPECIES

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Background: No previous studies on the comparative virulence of C. dubliniensis with non-albicans species are available.

Objectives:

1. Comparison of C. dubliniensis virulence and infection kinetics with other non-albicans species.
2. Comparison of the virulence of C. dubliniensis and C. albicans clinical isolates.

Methods: Experimental pathogenicity was determined by using mice in a model of systemic infection. Survival rate/behavioral changes were registered. Kaplan-Meier survival analysis (log-rank test, p< 0.05) was performed.

Infection kinetics was determined by microbiologic evaluations of organs (liver, spleen, kidneys, lungs, brain).

Results:

1. Higher mortality rate was observed for C. albicans (9/20), followed by C. tropicalis (3/20), C. dubliniensis (1/20) and C. krusei (0/20) (p>0.005).
2. No animal inoculated with C. dubliniensis showed behavioral/postural alterations.
3. Animals inoculated with C. albicans and C. tropicalis showed suggestive central nervous system involvement.
4. High number of C. dubliniensis cells was isolated from the lung after 6 hours.
5. C. dubliniensis showed higher capacity of dissemination to the kidney.
6. All species were isolated from the spleen and total elimination was observed for C. tropicalis, C. krusei and C. dubliniensis, but not for C. albicans.
7. C. dubliniensis was also detected in the liver, with slower clearance in relation to the other species.
8. A reduction of C. albicans, C. tropicalis and C. krusei counts was observed in all the organs.
9. This reduction tendency was observed for C. dubliniensis in lungs and spleen.
10. Continuous elevation of C. dubliniensis counts was observed for kidney and brain even at day 21.
11. C. albicans clinical isolates were more virulent than C. dubliniensis ones (p=0.000).

Conclusions:

1. C. dubliniensis was less virulent for mice than C. albicans and C. tropicalis.
2. C. dubliniensis caused persistent infection in kidney and liver.