
Résumé

**EXPERIMENTAL STUDIES
ON TREATMENT OF
CANDIDIASIS**

EIRO TSUBURA

The Third Department of Internal
Medicine, Osaka University Medical School

1) Following the inoculation of *Candida albicans* (*C. alb.*) into mice, rabbits, rats, guinea pigs and hamsters, pathohistological observations were made of a morbid course with survey of cultivation of the animals' organs.

As the results, it was found that *C. alb.* is more pathogenic in rabbits, mice and rats than in other animals. Also it was revealed that the experimental candidiasis can be divided into two types, although the course of development is different according to the virulence of *C. alb.*, inoculum and inoculation techniques. One is a septic type which causes dissemination, the other an abscess type which forms localized abscess.

2) As the result of the present study on treatment of experimental candidiasis *in vivo*, the following methods are considered to be most suitable for determining the effectiveness of anti-candida drugs or anti-candida serum.

a) Infection protecting effects on experimental mouse candidiasis (acute septic type):

The method is as follows: *C. alb.*, which are enough in amount to cause mortal sepsis within 4 to 10 days, are inoculated intraperitoneally to one group of mice, and the same lethal amount is injected into another group with a certain dose of test drugs by the same route. The death rates of the latter group is compared with those of the control group.

b) Therapeutic effects on experimental mouse candidiasis (chronic septic type):

Such amount of *C. alb.* to cause relatively chronic septicaemia is inoculated into mice intravenously. At the early stage of injection, test drugs are administered to the test group for 4 to 9 days. Then the animals are killed and autopsy is performed. Macroscopic and pathologic observations are made and culture of kidney is performed. The findings are compared with those of the control group.

c) Therapeutic effects on experimental pulmonary rabbit candidiasis (abscess type):

Localized abscess were formed in the lungs of rabbits following intrapulmonary inoculation of *C. alb.* After a certain period of treatment with the test drugs, the rabbits are killed and autopsy is performed. Then the macroscopic and pathohistological findings of the lungs are compared with those of the control group.

By combining the results of the above three experiments, the therapeutic effects of test drugs are evaluated.

3) Seventeen antifungal antibiotics and 25 synthetic compounds were tested *in vitro* and by the above animal experiments, the therapeutic effects were evaluated with the following results: Among the former group, trichomycin, nystatin and amphotericin B were most effective and No. 342 and datemycin were also effective to a certain degree. Among the latter group, merzonin was proved to be effective.

4) After producing anticandida-rabbit-serum, a study was made of the therapeutic effects revealing that the treatment with higher agglutinin titer may be effective.

5) As the result of combined therapy of trichomycin, nystatin, merzonin and anticandida-rabbit-serum, it was concluded that the combination of more than two kinds of these agents were found to increase their effectiveness.