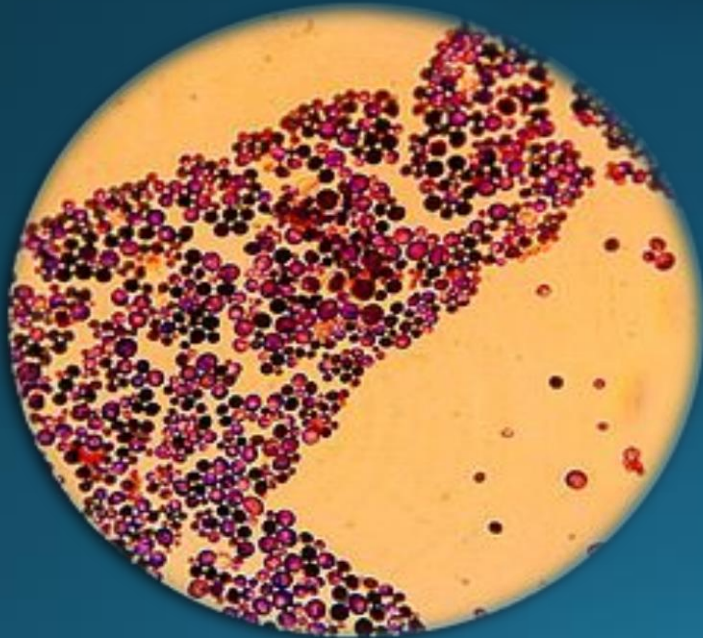


UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ

FACULTAD DE CIENCIAS QUÍMICAS

Laboratorio de Microbiología

Candida albicans



Alumno: Flores Soria Fernanda Guadalupe

Maestra: QFB. Juana Tovar Oviedo

Grupo: 11:00-12:00

The candidosis are Mycosis caused by opportunistic yeast of the genus *Candida*. Increasing immunosuppressed patients and indiscriminate treatment with antifungals can generate inadequate therapeutic response and resistance, circumstances that must be evaluated by in vitro tests.



Antifungal susceptibility testing

The tests of susceptibility in vitro are similar in design to the tests with agents antibacterial. The in vitro susceptibility testing ideally:

- a) Provide a measure the relative activity of two or more agents antifungicos accounting.
- b) They must correlate the in vivo activity and predict what you can expect in therapy.
- c) They allow to monitor the development of resistance among populations of normally susceptible organisms
- d) They predict the therapeutic potential of recent discovery agents.

Methods that are used to perform tests of antifungal susceptibility include the wines of dilution (macro and micro dilution), the agar dilution method and disc diffusion test. Currently we have evaluated two antifungal susceptibility testing commercial; the Test of microdilution colorimetric developed by Alamar Biosciences, Inc (Sacramento, California) and antifungal strip of diffusion in agar known as E test developed by AB Biodisk (Saria, Sweden).

Material and Method

- First is make tests direct to them samples with suspected of candidiasis with KOH 10% in search of pseudohifas or blastoconidios, or both.
- Then dextrose Sabouraud (ADS), and ADS are cultivated on agar media with antibiotics, incubated for 48 hours at 28 ° C.
- Is replanting a colony in medium CHROMagar® and cornmeal agar + Tween 80 1%; identifies each of the species based on the features in the second physiological and biochemical in the first half.

- Then was the sensitivity test with a colorimetric method, with the commercial case FUNGITEST® (BIO - RAD®), which enables you to determine in vitro sensitivity of yeasts of *Candida* spp. and *Cryptococcus* spp with the following antifungal: 5-fluorocytosine, amphotericin B, fluconazole, itraconazole, ketoconazole and miconazole, at two different concentrations that allow to identify: sensitivity, resistance or intermediate resistance (dose) of each strain studied



Figura 2.- Aislamiento de *Candida albicans* y estudio de sensibilidad

The case contains a plate with 16 wells (two positive controls, two negative controls and corresponding to the six antifungal 12) which are used two for each antifungal: for low concentration and high concentration. They were incubated for 48 hours at 28° C at the end of this period became the visual reading of each plate. First we checked wells of positive control (pink and visible growth) and negative (color purple and without growth), after the reading of each well with antifungal, interpreting them in the following manner: well with turn pink and visible growth as resistant (R); turn magenta as intermediate resistance (I) or sensibilidad-dosis tone - dependent (SDD) and purple as sensitive (S).

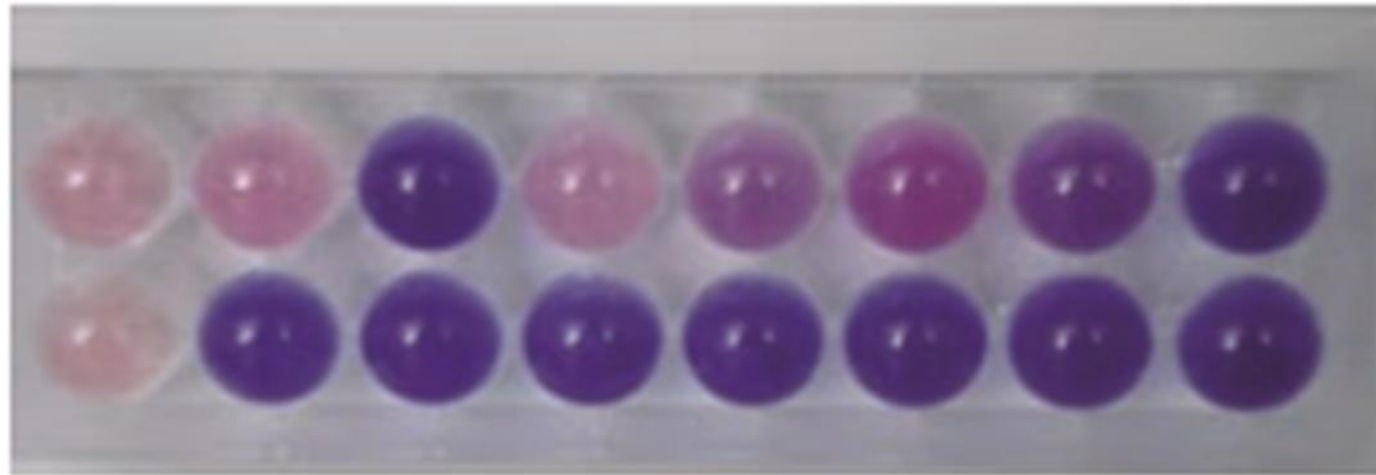


Figura 3.- Acercamiento a prueba comercial de sensibilidad

Cuadro 1. Respuesta de sensibilidad, resistencia y sensibilidad dosis-dependiente de los aislados clínicos de *Candida* spp. (Continúa en la siguiente página)

	<i>Antifúngico</i>	[$\mu\text{g/mL}$]	<i>Cepas sensibles (S)</i>		<i>Cepas resistentes (R)</i>		<i>Cepas intermedias (SDD)</i>	
			<i>Cantidad</i>	%	<i>Cantidad</i>	%	<i>Cantidad</i>	%
<i>Candida albicans</i>	SFC	2	40	97.6	1	2.4	0	0.0
		32	40	97.6	1	2.4	0	0.0
	AB	2	40	97.6	0	0.0	1	2.4
		8	41	100	0	0.0	0	0.0
	MCZ	0.5	29	70.7	6	14.6	6	14.6
		8	37	90.2	1	2.4	3	7.3
	KET	0.5	31	75.6	4	9.8	6	14.6
		4	33	80.5	3	7.3	5	12.2
	ITR	0.5	30	73.2	5	12.2	6	14.6
		4	32	78.0	4	9.8	5	12.2
	FLU	8	33	80.5	2	4.9	6	14.6
		64	31	75.6	2	4.9	8	19.5

CASE REPORT: MULTIFOCAL THRUSH

Go to the service of stomatological clinic of the school of Dentistry of the Comission, patient women's 46 years of age, natural and from Caracas, State Capital; by lesion in oral cavity.

Clinical examination demonstrate white plates soft thick on inside of lips, dorsal face and sides of tongue, face internal cheek, mucous of alveolar ridge top and bottom, soft palate and posterior pillars. which are of easy removal with a dental instrument.

Candidiasis in flange and lip bottom.



Candidiasis in top lip, tongue and corner



Candidiasis in top flange.

The patient concerned that since makes year and a half has lesions which appeared gradually. He decides to go to consultation, since it has pain and discomfort swallowing food which to eat them must be in the form of porridge, not supporting hard foods, that you notice the teeth began to fracture. Among the General background that it has lost 12 kg of weight since then, another important fact contributorio denies.

Shown HIV testing and routine laboratory tests.

The provisional diagnosis is pseudomembranous Candidiasis and Angular Cheilitis.

It is sample for direct examination of yeast. Also collected sample of mucosal to be planted in the midst of growing Agar-Sabouraud in the microbiology laboratory of the school of Dentistry of the Comission, 48 hours after reported us the presence of *C. albicans*.

Our definitive diagnosis was Candidiasis chronic Multifocal, since there were two different clinical forms that committed to this patient.

Told patient Nystatin vaginal suppository, dissolve one, three times a day for 2 weeks after meals.

Clinical control was carried out two weeks, where did you notice improvement in the injury, white plaques are observed decreased thickness persist erythematous areas, and it could reveal radicular remains widespread, despite concern the patient who had failed treatment but twice a day, and sometimes only once a day.

Do not change the treatment, since the patient refuses to swallow tablets tablets because he cannot swallow them. It goes through emphasis on the need to continue the treatment for 2 weeks more. That time is carried out an evaluation of the haematological examinations where turns out to be HIV negative and found that it had a value of Hb of 8 mg. Morphological changes of erythrocytes are not reported.

After 4 weeks of treatment, demonstrate that white plates were gone, the patient was referred to the Department of surgery for evaluation, where it was decided to continue medical treatment to regularize the hematologic alteration, to later be subjected to surgery of the teeth that could not be restored and then be restored.

CONCLUSIONS

- *Candida albicans* predominates as a causal agent of thrush as I demonstrate in our patient. Other species, have been found in samples of oral cavity. In patients with HIV + new species such as *C. dubliniensis* and *C. inconspicua* have been recognized.
- Nystatin is antifungal, rather useful in the initial treatment, the patient is reluctant to use the eggs or vaginal tablets, but have been shown better results with this presentation. (18) in our case, despite the fact that the patient had not complied fully with the treatment prescribed, we could observe noticeable improvement of the lesion.
- Tests of susceptibility for fungal agents, are increasingly necessary to implement for a clinical laboratory that handles patients immunosupresos.
- The difficulties inherent in these methods is observed, but it is a methodology which, without a doubt, we must implement.

BIBLIOGRAPHY

- http://www.scielo.sa.cr/scielo.php?script=sci_arttext&pid=S1017-85462001000100005. Métodos de susceptibilidad antifúngica. Revisión metodológica. Rev. méd. Hosp. Nac. Niños (Costa Rica) vol.36 n.1-2 San José Jan. 2001
- http://www.scielo.org.ve/scielo.php?script=sci_arttext&pid=S0001-63652003000200006. CANDIDIASIS MULTIFOCAL BUCAL. REPORTE DE UN CASO. Acta odontol. venez v.41 n.2 Caracas mayo 2003.
- Estudio in vitro de antimicóticos contra cepas de Candida aisladas de pacientes del Hospital General de México OD. Dermatol Rev Mex 2012;56(2):93-101