



## Oral, Intestinal and Vaginal Candidiasis, Pathogenesis and Clinical Presentation in Elbasan (Albania)

## KEYWORDS

oral candidiasis, intestinal and vaginal candidiasis

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**ABSTRACT** *Candida albicans* is a fungus present in most of the people around the world, as well as in Albania. The study of this fungus becomes really important according to the growing problems with multiple infections in several parts of the body, particularly in the intestine, vagina, mouth, with a great impact on public health, on which this paper will be focused.

Our study includes the period from January to December, 2012. The study was conducted in three stages: Taking samples from sick individuals, analysis of laboratory data and their processing. During this period, 2079 cases were analyzed, 1056 of which resulted positive with *Candida*. It is observed that most of the infected cases are those with intestine *Candida*, a total of 769 cases, or converted in 72.82%.

Then, in the second place, are those cases with oral *Candida*, a total of 278 positive cases or converted to 26.33%, and, in third place, those cases with vaginal *Candida*, only 9 cases positive, or converted to 0.85%.

The study is also based in the dynamic spread according to age group, which resulted that the most affected age group was 0-15 years and also that one over 46 years, respectively 58% and 25% of positive cases.

Regarding to the dynamic spread based on sex, women are more affected with *Candida* 52% against 48% of men. In some cases is performed mycogram.

## INTRODUCTION

*Candida* is a member of the fungi kingdom (mold.). The gender of *Candida* includes more than 350 species, where *Candida albicans* is the most prevalent. (2, 4). This moldy is like a white cream with a horrible scent, which grows in hot places, dark places and humid ones. Fungal infections affect more than 1 billion people every year. (1) The mould lives in 80% of the population without causing any problem. In the cases with an impact on health, *Candida* causes symptoms such as fatigue, irritability, anxiety, respiratory problems etc. It affects all ages from newborn babies up to the third age. As we mentioned earlier, the study is focused on three cases where human being is affected more by intestine candidiasis, as well as mouth and vagina candidiasis. (3, 6, 10, 13).

The main question is why in our days, *Candida* growth in the intestine is a major problem? We can say that the way of nutrition is one of the factors with a great impact. Foods in our days are less rich in minerals, vegetarians have lower levels of zinc, people consume more sugar and wheat, especially children. (5, 7, 11, 12). An increasing number of cases with candidiasis have also come from the great influence of the use of multiple antibiotics in an inappropriate way. (2, 8, 9). In Albania, as well as in the district of Elbasan, it happens that patients use antibiotics without medical prescription, as well as pharmacists sell and trade them without a prescription. Often, they also provide alternative options without considering neither antibiograms nor their sensitivity or medical prescription. Also, studies have shown that infection passes from one partner to another through sexual relationships.

## MATERIAL AND METHODS

The study of candidas in Elbasan district is made during a period of 1 year, from January-December 2012, at the Hygiene Institute. During 2012 samples were taken from 2079 different individuals of which 1056 cases resulted positive. The sample collection from the patient is done in the same way for all types of cultures (faeces, throat, vagina). We take material from a patient's mouth (throat, tongue, phlegm), material from faeces or vagina throughout different tampons

and then they are planted in Petri dishes with Saburo ground.

Petri dishes are placed in thermostat for incubation at 37 ° C for 48 hours. (4). Later we are capable of reading the colonies. The mould appears in the dish as a white color. If the result is positive then we are capable of distinguish, poz+, poz ++ or poz + + +. Thus, in those cases when the mold occupies 10-15% of the dish, we say that we resulted in *Candida* positively +, if the mold occupies up to 55% of the dish we can say that we have *Candida* poz + +. Meanwhile in those cases over 55% we evaluate it as *Candida* poz + + +, which is the most seriously infected and definitely needs treatment.

It is imperative that in the resulting positive cases with *Candida* we perform mycogram. But, in the district of Elbasan, the mycogram is performed rarely because of the lack of funds. Mykograma is usually realized with saturated discs with antimiotics.

## RESULTS AND DISCUSSIONS

There are registered 2079 suspected individuals for *Candida albicans* from January 2012 to December 2012. After the analysis, only 1056 cases out of 2079, have resulted positive with *Candida*. The data are grouped according to the origin of samples as from: mouth, vagina, faeces.

Figure 1 introduces us to the number of positive cases with *Candida* during year 2012, for the three types of cultures taken from the mouth, vagina and faeces. Thus, from 1056 cases positive with *Candida*, 769 of them are with *Candida* in the gut/intestine as well as in many other countries of the world. Also most cases, referring to the gender, were observed among women with 52% of positive cases with *Candida*.

Also, referring to the group-age, candidiasis is more common among children from 0-15 years old as well as in the adults over 45 years old, respectively 58% and 25%. From the results obtained during the study, most cases were recorded in January, April and October respectively 109, 110 and 123 cases.

Fig.1 The dynamic spread of Candida in Elbasan district during the period January-December 2012.

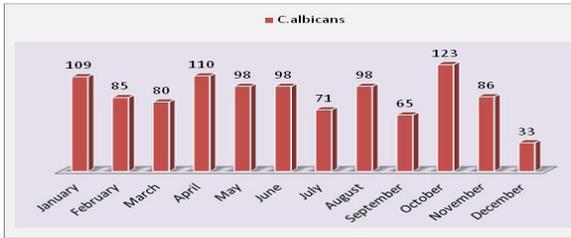


Fig.2 The dynamic spread of oral, intestinal and vaginal candidiasis in Elbasan district during the period January-December 2012.

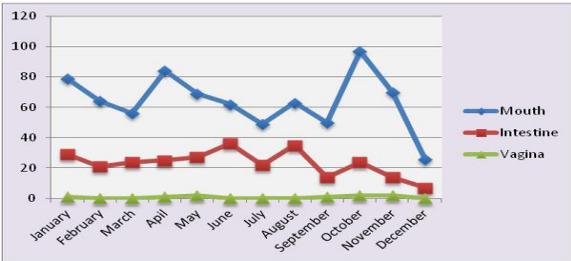


Fig.3 The dynamic spread of oral candidiasis in Elbasan district during the period January-December 2012.

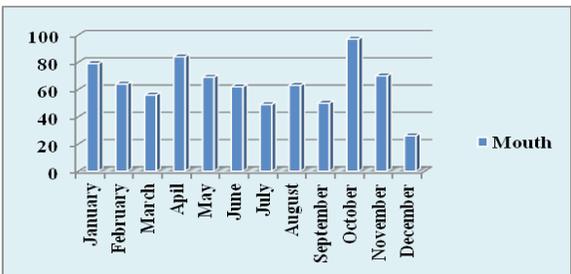


Fig.4 The dynamic spread of intestinal candidiasis in Elbasan district during the period January-December 2012.

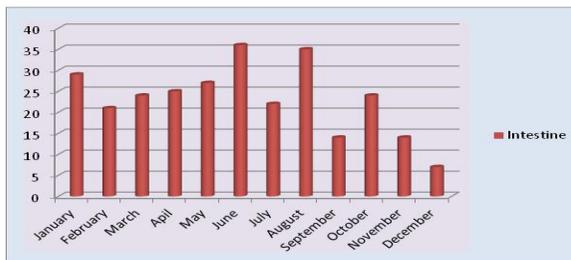


Fig.5 The dynamic spread of vaginal candidiasis in Elbasan district during the period January-December 2012.

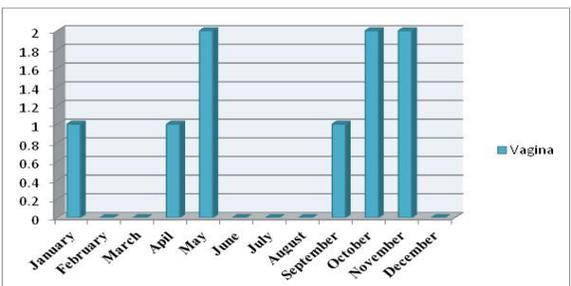


Fig.6 The dynamic spread of Candida albicans in % under shelter during year 2012.

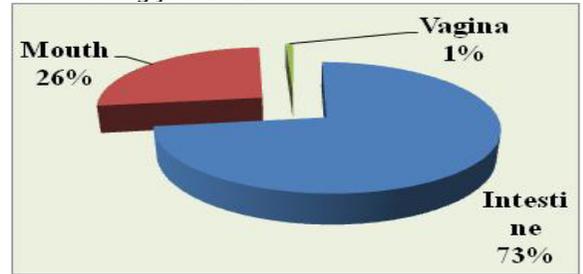


Fig.7 The dynamic spread of Candida albicans by months and sex in Elbasan district during the period January-December 2012.

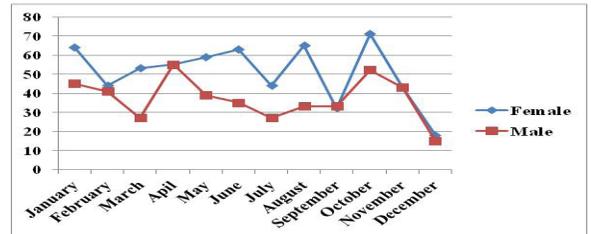


Fig.8 The dynamic spread of Candida albicans by age in Elbasan district during 2012.

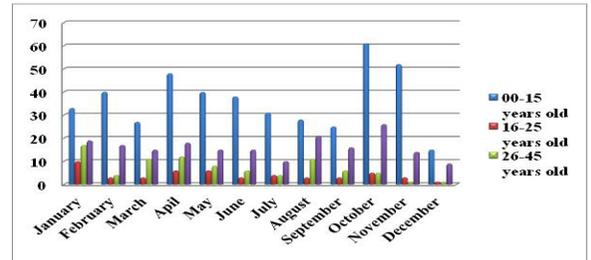
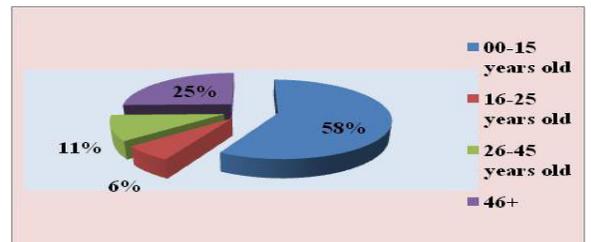


Fig.9 The dynamic spread of Candida albicans by age in Elbasan district during 2012 (%).



In those cases where mycogram is already performed, resulted that Candida is sensitive to Nystatina and is resistant to Amphotericin, Clotrimazole, Griseofluvinë and Terbinafine.

Table 1. The influence of antimycotics against Candida albicans

Antimycotic	Candida sensitivity to antimycotics
Amphotericin	Resistant
Fluconazol	average sensitive
Clotrimazol	Resistant
Ketokonazol	average sensitive
Mikonazol	average sensitive
Nystatin	Sensitive
Griseofluvinë	Resistant
Econazol	average sensitive
Terbinafin	Resistant

**CONCLUSIONS**

The study conducted in Elbasan district during 2012 concluded that:

- The population in this district is more affected by Candida in the intestine, as a result of an excessive usage of antibiotics used by people.
- Lack of vitamins usage or nystatin as accompanying elements for antibiotics.
- The way of feeding where we notice lack of minerals.
- Also, most of the cases with Candida in the intestine affect children because they usually use food with a great

amount of glucose as sweets, buy milk or even fruit juice.

- Meanwhile, referring to seasons, during spring and autumn the number of infected individuals with Candida grows. This as a result of a warm climax and humidity.

**Therefore:**

- The antibiotics usage must be done only when it is necessary and absolutely under doctor's recommendation
- It is recommended the use of more fruits and vegetables for children and adults rather than sugar content foods, because these group ages have a less consolidated immune system.

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