The Danger of Candida Albicans Microbe to Human

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Abstract

This study aims the effect of Candida albicans microbe on human health, what is the danger of Candida albicans microbe on humans, what are the side effects of Candida albicans microbe on humans? A questionnaire was prepared via Google Drive and distributed to the population aged 25-55 years, men and women, in the city of Mecca. As for the questionnaire, it was distributed via the social networking program (WhatsApp), 450 questionnaires were distributed, and 440 responses were obtained via email to the principal researcher. it concludes that, find that this type of fungus is dangerous and causes great troubles and problems to humans Candida albicans is the main cause of candidiasis, and infects the mucous membranes in the mouth, genitals, lungs and heart? yes 60%. Can yeast infections caused by other types of Candida be more difficult to treat and require more aggressive treatments? Yes 80%. If there is an imbalance in the body's natural acidity, Candida yeasts can grow out of control, creating a problem with the overall system in the body? Yes 60%. Candidiasis spread in hot and humid areas of the body? Yes 40%.

Keywords: the danger, of Candida albicans, microbe, to human.

Dooms per annum from fungal infections are greater than the global mortality due to malaria or breast cancer and are similar to deaths due to tuberculosis or HIV (1,2). As such, the major challenges facing medical mycology highlight the need to better understand the biological processes that promote fungal pathogenesis and host immunity, and to translate this knowledge into the development of novel immunotherapies, vaccines and diagnostics (1–4). One of the most important human fungal pathogens is Candida albicans, which causes millions of skins, mucosal (mouth, vagina, gut) and life-threatening systemic infections each year (1,2) recently, it was discovered that the invasive (hyphal) form of C. albicans secretes a cytolytic peptide toxin, named candidalysin (5). Before this, human fungal pathogens were not known to possess such toxins. This review will focus on how candidalysin was discovered and the functional roles of candidalysin during C. albicans infections, but the reader is also guided

to other reviews on the general pathogenicity and immune activation mechanisms during C. albicans infections (6–16). C. albicans is one of the very few fungal species causing disease in humans—millions of others do not. It is a member of the healthy microbiota, asymptomatically colonizing the gastrointestinal (GI) tract, reproductive tract, oral cavity, and skin of most humans (1, 17,18,19,20). In individuals with healthy immune systems, C. albicans is often harmless, kept in balance with other members of the local microbiota. However, alterations in the host microbiota (e.g., due to antibiotics), changes in the host immune response (e.g., during stress, infection by another microbe, or immunosuppressant therapy), or variations in the local environment (e.g., shifts in pH or nutritional content) can enable C. albicans to overgrow and cause infection. These infections range from superficial mucosal and dermal infections, such as thrush, vaginal yeast infections, and diaper rash, to hematogenous disseminated infection with sizable mortality rates (approaching 40% in some cases) (21, 22,23). Candida infections are especially serious in immunocompromised individuals (such as those with AIDS or those undergoing anticancer or immunosuppression therapies) and healthy people with implanted medical devices (24,25). C. albicans produces highly structured biofilms composed of multiple cell types (i.e., round, budding yeast-form cells; oval pseudo hyphal cells; and elongated, cylindrical hyphal cells) encased in an extracellular matrix (26, 27, 28, 29). Accounting for 15% of all hospital-acquired sepsis cases, species within the CTG clade (predominantly C. albicans, but including several closely related species as well) are the fourth most frequent cause of bloodstream infections in clinical settings and are the predominant fungal species isolated from medical device infections (30,31,32,33). Urinary and central venous catheters, pacemakers, mechanical heart valves, joint prostheses, contact lenses, and dentures are all susceptible to C. albicans biofilms (34, 35, 36, 37). Once it forms on an implanted medical device, a Candida biofilm has the potential to seed disseminated bloodstream infections and to lead to invasive systemic infections of tissues and organs.

Material and Methods:

The study began in (the city of Mecca in the Kingdom of Saudi Arabia), and the study ended with writing the data collection in September 2024. The researcher used descriptive analysis, an approach that uses quantitative or qualitative description of the social phenomenon (the danger of Candida albicans microbe to human). The independent variable (the effect of Candida albicans microbe on humans globally) and the dependent variable (the effect of Candida albicans microbe on humans locally). This type of study is characterized by analysis, reason, objectivity, and reality. It is also concerned with individuals and societies, as it studies the variables and their impact on the health of the individual, society, and the consumer, and the spread of diseases and their relationship. For demographic variables such as age, gender, nationality, and marital status. Status and occupation (38), and use the Excel 2010 Office suite pie chart to sort the results (39). The questionnaire is a wonderful and useful tool for collecting a huge amount of data, but the researchers were not able to conduct personal interviews with the participants in the online survey, due to social distancing rules at the time to prevent infection between participants and researchers and vice versa (Coronavirus sharing has not completely disappeared. of the community), and the questionnaire was only answered electronically, because the questionnaire consists of fifteen questions, all of which are closed-ended.

Results and discussion:

The percentage of approval to participate in a questionnaire entitled (the danger of Candida albicans to humans) was 100%, and the percentage of participants' ages was: 25-34 years

of age and 35-44 years of age, equal by 20%, and of 45-55 years of age, 60%, and their gender was 60% male. 40% are female, their nationalities are 100% Saudi men and women, and their professions are 100% male and female government employees. Their responses to the questionnaire questions were as follows: The first question: Candida or Candida albicans is the main cause of candidiasis, and it affects the mucous membranes in the mouth, genital organs, lungs, and heart. ? Yes, 60%, no, 0%, and 40%, I don't know. Question 2: Can fungal infections caused by other types of Candida fungi be more difficult to treat and require more aggressive treatments? Yes 80% and no 0%, I don't know 20%. Question Three: Candida or Candida albicans is the most common type of fungus that causes fungal infections? Question Four: Candida albicans is a type of fungus, a form of yeast, and the causative agent of opportunistic infections of the mouth and genitals in humans? The answer was also, yes, 60%, no, 0%, and I don't know, 40%. Question Five: Candida works to absorb nutrients. And it is digested when the levels are appropriate in the body, and when production increases, symptoms of Candida may appear in the digestive system, and if immediate intervention and treatment are not done, it may penetrate the walls of the intestinal lining and clog the bloodstream? The answer was the opposite this time, as yes, 40%, and I do not know, 60%, or 0%. Question Six: If there is an imbalance in the body's natural acidity, Candida yeasts can grow out of control, creating a problem with the body's general system? Yes 60% and I do not know 40%. The seventh question: Must we ensure the presence of beneficial bacteria and ensure that the immune system is working properly in fighting infection? Yes 60% and I do not know 40%. Question 8: Candida overgrowth syndrome. Can a person become allergic to certain substances such as dairy, eggs, corn, and gluten? Yes, 40%. I don't know, 60%. Question nine: Candidiasis spreads in hot and humid places in the body? Yes, and I don't know, 40% or 20%.

Table:no-1: the danger of Candida albicans microbe to human according to participants.

The danger of Candida albicans microbe to human	Yes	No	I don't know
Candida or Candida albicans is the main cause of candidiasis, and infects the mucous membranes in the mouth, genitals, lungs and heart?	60%	0%	40%
Can yeast infections caused by other types of Candida be more difficult to treat and require more aggressive treatments?	80%	0%	20%
If there is an imbalance in the body's natural acidity, Candida yeasts can grow out of control, creating a problem with the overall system in the body.	60%	0%	40%
Candidiasis spread in hot and humid areas of the body?	40%	20%	40%

There is a study entitled (Candidalysin: discovery and function in Candida albicans infections) by Julian R. Nagelke et al in 2019.

Conclusion:

Candida albicans is the main cause of candidiasis, and infects the mucous membranes in the mouth, genitals, lungs and heart? yes 60%. Can yeast infections caused by other types of Candida be more difficult to treat and require more aggressive treatments? Yes 80%. If there is an imbalance in the body's natural acidity, Candida yeasts can grow out of control, creating a problem with the overall system in the body? Yes 60%. Candidiasis spread in hot and humid areas of the body? Yes 40%. We find that this type of fungus is dangerous and causes great troubles and problems to humans.

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