

## DIAGNOSIS OF *CANDIDA* SPP. ISOLATED FROM UTI PATIENTS BY MORPHOLOGICAL AND MOLECULAR CHARACTERISTIC

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**ABSTRACT :** Aim of this study is recognize the fungi in urine specimens which collected from patients suffering from urinary tract infections from pathological laboratories, during the period ranging from June to November (2018), for study the infection rate in both groups. 130 candiduria patients and 45 non candiduria patients were tested. The infection rate in females was (65.38%) and males (34.62%), the infection was more common in the age groups (21-29) years old. Cultural characteristic and biochemical criteria revealed that (41.30%) of isolates were *C. albicans*, which is more prominent followed by *C. parapsilosis* (27.17%), *C. tropicalis* (19.56%) and *C. krusei* (11.95). Genomic DNA of species were extracted and analyzed with Polymerase Chain Reaction (PCR), sequencing analyses.

**Key words :** *Candida* spp, urine sample, chromagar, ITS3, ITS4.

### INTRODUCTION

Urinary tract infections (UTI) are severe health harms affected billions of persons each year. They are the second greatest communal kind of infections in the body (Stamm *et al*, 2001). This problematic occurs more frequently in females than males because a female's urethra is smaller. The greatest communal signs are burning through urination and having to urinate often (Onifade *et al*, 2011).

UTIs were usually categorized as: complicated or uncomplicated. Nevertheless, they are two kinds of UTI presentations: lower UTI which is an infection of the bladder and the urethra known as cystitis and urethritis, respectively. The other type is upper UTI; an infection of the kidneys and the ureters known as pyelonephritis and urethritis, respectively. Upper UTIs are more severe than lower UTIs because there is a probability of kidney damage (Priyadharsini *et al*, 2014).

Fungal infection of urinary tract infection caused by *Candida* species *Aspergillus* and *Penicillium* (Al-Mamoory, 2014). *Candida* was a non-pathogenic yeast, it is communal flora of the mucous Sheaths of female genital tracts, gastrointestinal tract and upper respiratory tract, sometimes which developed to become pathogenic yeast. It was invade the membrane and causes candidiasis (opportunistic infection) in immunocompromised persons (Sardi *et al*, 2013).

The existence of *Candida* species in urine (candiduria), is naturally asymptomatic. Candiduria is unusual in healthy patients but is more common in hospitalized patients and especially those in intensive care (Othman *et al*, 2018).

### MATERIALS AND METHODS

#### Collection of fungal samples from patient

The experimental study based on 175 patients suffering from urinary tract infection referred to the surgical Hilla hospital in Hilla city, Iraq during 2018 (April to August).

#### Isolation of filamentous fungi and identification

Laboratory, the samples of fungal inoculated on Potato dextrose agar medium (PDA) and Sabouraud Dextrose Agar medium (SDA). The colonies recognized identify to macroscopic and microscopic forms such as spores and mycelium using staining method.

#### Diagnostic tests for yeasts

The identification of yeast based on formation of germ tube, chlamydospore formation, hydrolysis of urea and CHROM agar, this medium used to distinguish between the species of *Candida*, dependent on the color and appearances of the surface of the colony different colors.

#### DNA extraction and sequence analyses

The Favor Prep™ Genomic DNA Mini Kit is used