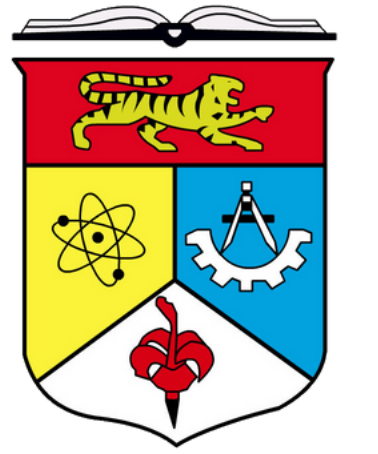


Acute pyelonephritis with candidemia caused by fluconazole resistant candida albicans

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Intro

An increasing number of azole-resistant *Candida albicans* strains have arisen due to the evolution of acquired resistance and an epidemiological shift toward less vulnerable species. Here we highlight a case of acute pyelonephritis with candidemia caused by fluconazole-resistant *Candida albicans* in a patient with no previous exposure to antifungal.

Methods & Findings

A 44-year-old woman with newly diagnosed diabetes mellitus presented with a right loin pain and dysuria for 2 weeks. She was febrile and hemodynamically stable. Clinical examinations reveal tenderness at right lumbar region. Laboratory values were significant for leukocytosis of $19 \times 10^9/L$ with raised CRP of 37 mg/dl. Urinalysis showed positive urinary nitrites and leukocytes. Blood culture grew yeast awaiting species identifications and urine culture grew *Candida* species. Ultrasound showed right pyonephrosis. She later underwent right ureteric stenting and removal of ureteric stone. She was empirically treated with intravenous fluconazole. Antifungal susceptibility testing done in our laboratory is via Sensitre YeastOne susceptibility system method. Her results later revealed that the *Candida albicans* was resistant to fluconazole. She was immediately started on intravenous Amphotericin B which was sensitive as echinocandin was expensive at our center. Repeated cultures after antifungal initiation remained negative at 48 and 72 hours. She was discharged after a total of two weeks of treatment without any further sequelae.

| Antifungal agent | MIC(ug/ml) | Interpretation |
|------------------|------------|-----------------------------|
| Amphotericin B | 0.25 | Susceptible |
| Anidulofungin | 0.03 | Susceptible |
| Micofungin | 0.015 | Susceptible |
| Caspofungin | 0.03 | Susceptible |
| Flucytosine | 0.12 | Susceptible |
| Posaconazole | 0.5 | No interpretation |
| Voriconazole | 0.5 | Susceptible -dose dependent |
| Itraconazole | 0.5 | Susceptible -dose dependent |
| Fluconazole | 16 | Resistant |

Table 1: Antifungal sensitivity testing of *Candida albicans* isolated from patient's blood culture

Discussion

Fluconazole drug resistance is generally induced by an increase in the efflux of the drug from the fungal cell and alterations to the sterol biosynthesis pathway caused by point mutations, such as the twofold deletion of ERG3 in *Candida albicans*.

Conclusion

This is a rare case of *Candida albicans* candidemia which was fluconazole resistant in an immunocompetent host with no previous exposure to azoles adds on to the evidence of de novo azole resistance in our local Malaysia setting.

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Petrick Periyasamy <petrick.periyasamy@gmail.com>
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Fri, 7 Oct, 4:25 PM

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