Question 84 – Infectious Diseases
A 63 year old woman is recovering from induction chemotherapy commenced 28 days previously for acute myeloblastic leukaemia. She is receiving granulocyte colony stimulating factor (G-CSF) and is no longer neutropenic. A Hickman’s catheter is in situ. She remains intermittently febrile and *Candida albicans* continues to be cultured from samples obtained from the Hickman’s catheter and peripheral blood, despite therapy with intravenous amphotericin B (1mg/kg/day) from day 20.

The most appropriate course of action is to:

A) Increase the dose of amphotericin B  
B) Arrange granulocyte transfusion  
C) Change to liposomal amphotericin  
D) Exclude hepatosplenic candidiasis radiologically  
E) Remove the Hickman’s catheter

Answer: E

**The mantra of ID in bacteraemia: remove any foreign body!**
Positive cultures from both Hickman’s + peripheral blood indicate this is a true fungemia. Candida grows on bio-films (eg catheters); if the line is not removed, it is a continual nidus.

Usually exclusion of fungal sites would be done *prior* starting treatment so D is incorrect  
- CT sinuses/chest/abdo/pelvis  
- Ophthalmology review re candidal retinitis  
- TTE for fungal endocarditis (usually bulky and destructive, surgical management)

A) and C)

Amphotericin used as anti-fungal in febrile neutropenic protocol  
[In some centres, echinocandins (eg caspofungin) used 1st line (at least as effective as amphotericin, but less nephrotoxic and infusion-related side effects even cf to liposomal preparations)]

- Usually start with CAB (conventional amphotericin B) 0.5mg/kg IV daily  
- 1mg/kg IV daily if suspect aspergillosis (on max dose despite candida so A is wrong)  
- *Polyene*: Binds to sterols on cell membrane -> membrane permeability increases -> hydrophilic contents leak out -> fungal cell dies  
- **Broad spectrum** against most common fungi but **poor CSF penetration**  
- Resistant against the unusual *Fusarium* and *Trichosporon*  
- **No evidence to suggest liposomal preparation has superior efficacy or survival benefit** (though sometimes used for those who’ve failed CAB)  
- Less nephrotoxic and less infusion-related side effects, but expensive (> 10X)

B)

Granulocyte transfusion not indicated in this patient  
- Not common, short *t1/2*: 7 hours (daily infusions, multiple donors)

<table>
<thead>
<tr>
<th>Indications</th>
<th></th>
</tr>
</thead>
</table>
| * Neutropenia (Nφ < 0.5)  
* Evidence of infection (eg fever/ +ve blood cultures/ CXR changes)  
* Unresponsive to antibiotics >48 hours  
* Chronic granulomatous diseases (impaired granulocyte function)  
* Neonatal sepsis |  |

<table>
<thead>
<tr>
<th>Complications</th>
<th></th>
</tr>
</thead>
</table>
| * Fevers/ chills  
* Transfusion related GVHD  
* ARDS (sequestered granulocytes in pulmonary circulation)  
* Alloimmunisation  
* Infections |  |