

## 預防策略的省思

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Invasive fungal infection (IFI) is an emerging problem among immuno-compromised or critically ill patients, especially hematopoietic stem cell transplantation recipients or patients with hematological malignancies. Delayed treatment of IFI in these patients can result in detrimental outcome so that timely intervention is an important issue for IFI. Different therapeutic concepts, such as pre-emptive or empirical strategies, are proposed, but problems such as lack of appropriate diagnostic tests still exist. Prophylaxis for IFIs, therefore, is still an attractive choice for patients at high-risk, and various new antifungal agents are documented to have clinical efficacy for this strategy.

Anyway, the major pitfall for prophylactic use of anti-fungal agents is the risk of un-necessary treatment and its several accompanying challenges. The first one is to identify patients at high risk. Due to the differences in environmental factors and treatment applied between regions and institutes, the risk of IFIs can be significantly different in the same patient population. Therefore an institute- or region-based epidemiology should be described in order to define high-risk patients; furthermore, pharmaco-economical outcome studies are also essential to verify the cost-effectiveness of this prophylactic strategy in defined regions. The second challenge is to manage adverse effects. Although less toxicity profiles have been reported for current new anti-fungal agents than for conventional ones such as amphotericin-B, some new adverse effects such as hepatotoxicity or GI intolerance still make some troubles for their use in prophylaxis. The third challenge is to keep steady pharmacokinetics of prophylactic agents, because extensive drug-drug interaction or poor absorption in oral route are noted for some drugs and they can result in serious problems in patients receiving sophisticated treatment. The fourth challenge is to manage breakthrough IFIs under prophylaxis, especially for those patients in whom under-dose of the currently applied drug or emergence of resistant pathogens cannot be cleared differentiated.