Invasive fungal disease (IFD) is a major infectious complication in patients with hematological malignancies” Wang et al (2018).

Abstract:

Invasive fungal disease (IFD) is a major infectious complication in patients with hematological malignancies. In this study, we examined 4889 courses of chemotherapy in patients with hematological diseases to establish a training dataset (n = 3500) by simple random sampling to develop a weighted risk score for proven or probable IFD through multivariate regression, which included the following variables: male patients, induction chemotherapy for newly diagnosed or relapsed disease, neutropenia, neutropenia longer than 10 days, hypoalbuminemia, central-venous catheter, and history of IFD. The patients were classified into three groups, which had low (0-10, ~1.2%), intermediate (11-15, 6.4%), and high risk (> 15, 17.5%) of IFD. In the validation set (n = 1389), the IFD incidences of the groups were ~1.4%, 5.0%, and 21.4%. In addition, we demonstrated that antifungal prophylaxis offered no benefits in low-risk patients, whereas benefits were documented in intermediate (2.1% vs. 6.6%, P = 0.007) and high-risk patients (8.4% vs. 23.3%, P = 0.007). To make the risk score applicable for clinical settings, a pre-chemo risk score that deleted all unpredictable factors before chemotherapy was established, and it confirmed that anti-fungal prophylaxis was beneficial in patients with intermediate and high risk of IFD. In conclusion, an objective, weighted risk score for IFD was developed, and it may be useful in guiding antifungal prophylaxis.
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