Correlation between Antifungal Treatment and Galactomannan Antigen in Adult Hematologic Patients at Risk for Invasive Aspergillosis

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Objectives:
To analyse the correlation between antifungal treatment and galactomannan antigen in adult hematologic patients at risk for invasive aspergillosis (IA) together with the results of serial serum Aspergillus galactomannan (GM) antigen testing.

Material and Methods:
In a retrospective study for patients at high risk of *aspergillus* pulmonary infection, serum GM test was used to detect GM concentration 2–3 times per week during the periods of high risk for IA. High-resolution CT was performed in case of abnormal chest X-ray and/or persistent fever after 5 days of antibiotic treatment. IA was classified as either "proven" or "probable" in accordance with the definitions stated by the European Organization for Research and Treatment of Cancer/Mycosis Study Group (EORTC-MSG).

Results:
A total of 82 hematological patients were diagnosed of "proven IA" (n=1), and "probable" IA (n=28), and "possible IFD" (n=23) and "No IFD" (n=30).The sensitivity of the GM test was 84.6%, and the specificity was 81.3%. The false positive rate was 18.8%, the false negative rate 15.4% and the diagnosis rate 82.8%. This group of 82 patients received prophylaxis fluconazole treatment at a median of days 19.7 (range 9- 26).

Conclusion:
Serum GM test could be taken 2-3 times/week in adult hematologic patients at risk for IA. The GM value was correlated to the amount and the fungal load in patients. The GM test is also earlier than the conventional CT or chest X-ray scan.

Global characteristics	Overall episodes (n=82)
Median age (range)	58(18-81)
Sex (male/female)	56/26
Underlying disease	
Acute leukaemia/myelodisplastic syndrome	36
Others	46
Type of treatment	
Chemotherapy(CT)	48
HSCT	21
Status of basal disease[a]	
Early	12
Non-early	27
Risk factors for IA[b]	
Neutropenia + fever > 96h[c]	36
Immunosuppressive treatment	22
Serve acute/chronic GVHD	13
Prolonged receipt of corticoids	11
Two or more risk factors	12
Median time of IA after treatment (CT or HSCT), in days (range)	11(2-189)
Overall mortality	
Related to IA, with/without other causes (% of total deaths)	11
Others	1

HSCT: Hematopoietic stem cell transplantation; GVHD: Graft-versus-host disease.

a Disease phase at transplant was categorized as early (any hematological malignancy in first complete or partial remission after chemotherapy) and advanced (second or higher complete remission, relapsed or refractory disease, any indication for a second transplant).

b See definitions of risk factors in the text above.

Table 1. Characteristics of the patients

Group	Diagnosis before GM test	GM (+)	GM (-)
Proven IA	1	1	0
Probable IA	28	22	6
Possible IFI	23	5	18
No IFI	30	4	26
Total	82	32	50

Table 2. GM test results and patient diagnosis

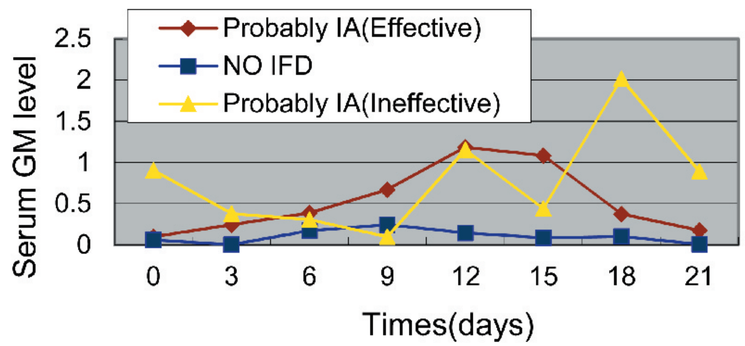

Table 3. GM test results during the antifungal treatment

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