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Abstract (poster session)

Host factors for invasive fungal infection among patients with haematological malignancies: a case control study

M. Hoenigl*, T. Valentin, A. Strohmeier, V. Strenger, H. Salzer, C. Koidl, A. Valentin, K. Seeber, I. Zollner-Schwetz, A. Woelfler, W. Buzina, R. Krause (Graz, AT)

Objectives: Host factors defined by revised EORTC/MSG criteria describe predisposing conditions of the individual for development of invasive fungal infection (IFI). Fulfilment of these factors is required for establishing diagnosis of possible or probable IFI which account for the majority of IFI in recent epidemiologic studies among patients with hematological malignancies. Host factors have, therefore, a major impact on IFI epidemiology when current criteria for defining IFI applied. This study evaluates host factors among patients with hematological malignancies. Methods: This is a single center study. Fifty-eight patients with haematological malignancies who developed probable (n=38) or proven (n=20) IFI within a five-year-period were retrospectively evaluated regarding host and risk factors for IFI such as neutropenia, use of corticosteroids or t-cell suppressants, stem cell transplantation (SCT), underlying diseases and demographic factors. Aspergillus spp. was the leading causative pathogen (n=36), followed by Candida spp. (n=12). Results obtained were compared to results of patients with hematological malignancies who did not develop IFI (120 patients who received systemic antifungal therapy and 197 patients who did not, all data collected in 2010). Patients with possible IFI were excluded from the study. Results: Prolonged neutropenia, recent allogeneic SCT, steroid therapy and t-cell suppressive therapy were significantly associated with development of IFI and/or invasive mould infection (IMI) in our patient collective. In the case of prolonged corticosteroid use a cut-off of 14 days was highly significantly, while the currently proposed cut-off (21 days) was significantly associated with development of IFI. Results are depicted in table 1. Conclusion: We conclude that host factors according to revised EORTC/MSG criteria were significantly associated with development of IFI/IMI in our collective of patients. In case of previous allogeneic SCT not related to current onset of IFI we found, however, no association with IFI. Concerning prolonged corticosteroid treatment a cut-off of 14 days may seem favourable when compared to the currently proposed cut-off. Further and bigger studies are necessary to evaluate these issues.

	Group 1 Patients with Probable/Proven IFI	**Group 2** Patients with Systemic Antifungal Therapy but without IFI	**Group 3** Patients without Systemic Antifungal Therapy and without IFI	P Value if Significant
N	58	120	197	
Sex Male/Female	40/18	73/47	100/97	
Age in Years (Median)	50.78	54.24	62.54	
Room of Care Hepa-filtered Room/Standardr Room	14/44	19/101	9/188	
Underlying Disease				
AML	24	48	13 #	P<0.001
NHL	7	27	95 #	P<0.001
MDS	4	12	3 #	P<0.01
MM	2	4	32 #	P<0.01
CLL	4	9	33 #	P<0.01
ALL	10 §	9	3 #	P<0.01
Others	7	11	18	
Polychemotherapy				
High Dose	38 *	66	87	p<0.01
LowDose	8	17	57	
None	11	37	52	
Bronchoscopy Rate	30/58 (52%) #	10/120 (8%)	5/197 (3%)	P<0.001
GVHD	10	19	0	
3 or more Host Factors Present	19/58 (33%) #	15/120 (12.5%)	1/197 (0.5%)	p<0.01
Neutropenia ($0.05x10^9$)				
No	17	52	175	
< 10 Days	6	39	15	
>10 Days	35 #	29	7	p<0.001
Median (Days)in Case of Neutropenia	17	10,5	6	
T-Cell-Suppressants within 90 Days	41	69	36 #	P<0.001
Use of Corticosteroids (Mean Minimum Dose of 0.3 mg/kg/day of Prednisone Equivalent)				
No	32	80	121	
< 14 Days	8	31	72	
>14 Days < 21 Days	5 #	3	1	P=0.001
> 21 Days	13 #	6	3	P=0.001
HSCT				
Allogeneic Current	11	12	0 #	p<0.001
Allogeneic Prior	9	22	17	
Autologous Current	2	5	8	
Autologous Prior	3	2	2	

Table 1: Demographic data and Host Factors in Group one, two and three

Note. ALL, acute lymphoblastic leukaemia; AML, acute myeloid leukaemia; CLL, chronic lymphocytic leukaemia; GVHD, graft-versus-host disease; HSCT, haematopoietic stem cell transplantation; IFI, invasive mould infection; MDS, myelodysplastic syndrome; MM, multiple myeloma; NHL, non-Hodgkin lymphoma

* Significant difference to Group 3

§ Trend compared to Group 2, p=0.06

Significant difference to other 2 groups