EV0984
ePoster Viewing
Clinical epidemiology of infections in immunocompromised hosts

Epidemiology of febrile events (FE) and safety of early antibiotic discontinuation (AD) in neutropenic patients (pts) with acute lymphoblastic leukaemia (ALL)

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Background: The aim of this study was to evaluate the epidemiology of FE and safety of early AD in neutropenic pts with ALL on different chemotherapy phases (CP).

Material/methods: Single-center, prospective observational study in adults with newly diagnosed ALL treated by «ALL-2009» protocol (NCT01193933) was performed from Jan 2013 till Nov 2015. Pts were followed up for 180 days.

Results: Total of 44 pts were enrolled (22-male, 22-female; median age 26 (17-61). On admission hyperleukocytosis was in 25% (11/44) of pts, ECOG score≥ 3 had 61% (27/44).

These pts had 165 CP (1st induction–44, 2nd induction–42, 1st consolidation–40, 2nd consolidation-39). Neutropenia was in 38% of CP, median duration 15 (2-45) days, more frequent and prolonged in 1stinduction then in other CP (68% vs 48% vs 13% vs 21%, p=0.05; 23.5 vs 8.5 vs 10 vs 7 days, p=0.03).

FE occurred in 23% (38/165) of CP, predominantly in 1st induction (57% vs 17% -2nd induction vs 15%-1st consolidation, p=0.0001). None FE were in 2ndconsolidation.

FE (38) reasons were: fever of unknown origin (FUO) in 21% (8), clinically documented infection (CDI) in 47% (pneumonia-15, cellulitis-3), bloodstream infection (BSI) in 32% (12).

Among BSI pathogens Gram-negative bacteria were in 66% (*E. coli*–3, *Salmonella* spp.–3, *K. pneumonia*–2, *E. asburae*–1, *C. youngae*-1), Gram-positive bacteria were in 44% (*B. cereus*–2, *S. aureus*–2, *E. faecium*–1). BSI was polymicrobial in 25% (3/12).

Rate of invasive mycoses (IM) was 16% (7/44): 3-invasive aspergillosis, probable (IA), 1-mixed IA, probable plus mucormycosis, 3-hepatosplenic candidiasis. All IM occurred in induction. Nobody had IM in consolidation (p=0.009).

AD was performed in 45% (17/38) of FE in persistently neutropenic pts. At the time of AD median WBC count was $0.7x10^9$/L (0.2–0.9). Median time from defervescence till AD was 2.5 (1–3) days in FUO and 7 (1-19) days in CMI and BSI. The median time from AD till neutrophil recovery was 8 (4–29) days.

Fever recurrence (FR) was in 29% (5/17) of pts with AD. FR reasons were: FUO-1, CDI-2 (cellulitis), BSI-1 (*E. cloacae*), IA-1. All pts became afebrile after the start of appropriate antibiotics. Nobody was admitted to ICU and all survived.

Overall 180 days mortality was 7% (3/44), 2 pts died in 1st induction (1-IA+mucormycosis, 1–IA+BSI due to *B. cereus*) and 1 after 2ndconsolidation in follow-up period (BSI due to *Salmonella* spp.).

Conclusions: Our study showed relatively low rate of infections (23%) in ALL pts treated by «ALL-2009» protocol. FE prevailed in 1st induction, nobody had infections in 2ndconsolidation. Most pts (79%) had CMI and BSI. Antibiotics were safely stopped in 45% of persistently neutropenic pts. FR was only in 29% of them and did not affect mortality.