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Paper Poster Session VI

Infections in neutropenia and stem cell transplantation

Impact of levofloxacin prophylaxis (LP) in acute leukaemia (AL) patients with neutropenia in a high quinolone resistance setting

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Objectives: In our centre the colonization rate of quinolone-resistant *E. coli* is around 40% in patients with high-risk hematological malignancies. We prospectively evaluated the effect of LP and compared with retrospective data from patients with no prophylaxis on morbidity and mortality and emerging quinolone resistance in Gram-negative bacteria from neutropenic AL patients.
Methods: We analyzed a cohort of 600 episodes of chemotherapy-induced neutropenia in two consecutive periods: January 2006-October 2009 (retrospective, no LP, 99 patients, 351 episodes) and November 2009-April 2013 (prospective, with LP, 80 patients, 249 episodes). The rates of bacteremia, common infection sites, complications and overall survival were compared in both cohorts. Quinolone resistance patterns were recorded in isolated bacteria from blood cultures.
Results: Patient characteristics were similar with regards to age, gender, underlying diseases, comorbidities, performance status (ECOG), chemotherapy protocols, GCSF-, steroid-use, and duration of neutropenia. The patients were followed up a median of 99 days (7-399). Those with LP had fewer episodes of febrile neutropenia (162/249 [65,0%]?*vs* 291/351 [82,9%], p <0,001), bacteremia (29/249 [11,6%] *vs* 80/351 [22,8%], p<0,001), urinary tract infection (21/249 [8,4%]?*vs* 55/351 [15,7%], p=0,01), pneumonia (12/249 [4,8%]?*vs* 37/351 [10,5%], p=0,013), typhlitis (4/249 [1,6%]?*vs* 16/351 [4,6%], p=0,05), sepsis (3/249 [1,2%]?*vs* 22/351 [6,3%], p=0.002), and shorter median duration of febrile neutropenia (3 [2-17] *vs* 6 [2-21] days, p<0,001). In addition, both Gram-negative (25/249 [10.0%] *vs* 74/351 [21,1%], p<0,001) and -positive bacteremia (15/249 [6.0%] *vs* 52/351 [14,8%], p=0,001) were significantly lower in LP group. Rates of quinolone resistance in *E. coli* and *K. pneumoniae* isolated from blood increased in patients with LP (*E. coli*: 12/14 [85,7%] vs 16/30 [54,4%], p=0,049) and *K. pneumoniae* (3/7 [42,9%] vs 1/18 [5,6%], p=0,053). Overall mortality was significantly lower in patients with LP (12,5% vs 61,6%, p<0,001).
Conclusion: LP in patients with AL decreased morbidity and mortality in a high-quinolone resistance setting. This beneficial effect must be carefully weighted against the risk of increasing quinolone resistance due to LP.