27th ECCMID Vienna, Austria 22 – 25 April 2017

The congress of ESCMID

Session: EP078 Gram-negative bacteraemia: risk factors, prophylaxis and treatment

Category: 2b. Severe sepsis, bacteraemia & endocarditis

23 April 2017, 14:12 - 14:17
EP0431

Impact of fluoroquinolone prophylaxis during neutropenia - data from a bloodstream surveillance programme in 8755 patients receiving high-dose chemotherapy for haematologic malignancies between 2009 and 2014

Winfried V. Kern[1], Andreas F. Widmer[2], Suanne Weber[3], Klaus Kaier[3], Tim Götting[4], Hartmut Bertz[5], Markus Dettenkofer[6], Christian Theilacker*[7]

[1]*University Hospital; Center for Infectious Diseases & Travel Medicine*

[2]*University Hospital Basel; Division of Infectious Diseases and Hospital Epidemiology; Infectious Diseases & Hospital Epidemiology*

[3]*Albert Ludwigs University of Freiburg ; Center for Medical Biometry and Medical Informatics*

[4]*University Medical Center Freiburg; Department of Environmental Health Sciences and Hospital Infection Control*

[5]*University Medical Center*

[6]*University Medical Center Freiburg*

[7]*Pfizer Vaccines, Paris; Medical Development and Scientific Affairs International Developed Markets*

Background: Fluoroquinolone prophylaxis (FQPx) has been commonly used in patients with neutropenia, but its efficacy has been challenged by the emergence of fluoroquinolone resistance. We evaluated the effects of FQPx on primary bloodstream infection (BSI) using a hospital infection surveillance system in participating cancer centers in Germany, Austria and Switzerland.

Material/methods: The incidence and mortality of BSI during neutropenia associated with high-dose chemotherapy for hematologic malignancies with or without hematopoietic stem cell transplantation (HSCT) were monitored by active infection surveillance between 2009 and 2014 at 17 to 26 centers.

Results: A total of 8755 patients (4223 allogeneic HCST, 3602 autologous HSCT, 930 induction chemotherapy without transplantation) were evaluable of whom 5302 (61%) received FQPx.

Competing events analysis revealed that FQPx was associated with a slightly lower incidence of BSI (14.8% vs. 16.6%, adjusted subdistribution hazard ratio [SHR] 0.85, 95% confidence interval [95%CI] 0.77-0.95) and fewer gram-negative BSI (4.6% vs. 7.7%, SHR 0.59, 95%CI 0.49-0.7). The difference between patients with and without FQPx was most pronounced in patients with induction chemotherapy (3.7% vs. 9.2 %, SHR 0.38, 95%CI 0.22-0.66) and in autologous HSCT recipients (4.0% vs. 9.0%, SHR 0.43, 95%CI 0.33-0.57) while no impact was detected in allogeneic HSCT recipients (5.3% vs. 5.6%, SHR 0.93, 95%CI 0.71-1.22). The efficacy of FQPx to prevent gram-negative BSIs remained unchanged over the observation period (Figure). FQPx was associated with a marked reduction of all-cause mortality during neutropenia in patients with induction chemotherapy (2.3% vs. 7.3%, SHR 0.29, 95%CI 0.15-0.56). A more moderate effect on mortality was seen for allogeneic HSCT recipients (3.5% vs. 4.8%, SHR 0.71, 95% CI 0.52-0.97). In contrast, mortality did not differ between patients with our without FQPx in autologous HSCT recipients (0.6% vs. 0.9%, SHR 0.62 95%CI 0.29-1.35).

Conclusions: FQPx as used in the participating centers was associated with reduced gram-negative BSI and improved survival in neutropenic patients with induction chemotherapy for acute leukemia. Positive effects were less clear in HSCT patients.

Figure Annual incidence of BSI between 2009 and 2014. **A** overall BSI incidence. **B** incidence of gram-negative BSI in patients with (left columns) and without (right columns) FQPx.