

Session: P083 Antifungal drugs and treatment I

Category: 6c. Antifungal drugs & treatment

25 April 2017, 12:30 - 13:30
P1709

Decrease of invasive fungal disease incidence in children with malignancy or undergoing haematopoietic stem cell transplantation after introduction of national programme of antifungal prophylaxis with posaconazole

Jan Styczynski¹, Krzysztof Czyzewski², Olga Gryniewicz-kwiatkowska³, Agnieszka Zaucha-Prazmo⁴, Liliana Chelmecka-Wiktorczyk⁵, Jowita Fraczkiewicz⁶, Malgorzata Salamonowicz⁴, Anna Szmydki-Baran⁴, Renata Tomaszewska⁴, Olga Zajac-Spychala⁴, Ninela Irga-Jaworska⁷, Marcin Plonowski⁴, Tomasz Ociepa⁴, Filip Pierlejewski⁴, Zuzanna Gamrot-Pyka⁸, Zofia Malas⁹, Agnieszka Urbanek-Dadela¹⁰, Jolanta Gozdzik¹¹, Weronika Stolpa⁴, Lidia Gil¹²

¹*Szpital Uniwersytecki Nr 1 Im. Dr Jurasza ; Pediatric Hematology and Oncology*

²*Collegium Medicum Umk*

³*Centrum Zdrowia Dziecka*

⁴*Uniwersytet Medyczny*

⁵*Instytut Pediatrii*

⁶*Medical University; Department of Paediatric Bone Marrow Transplantation, Oncology and Hematology*

⁷*Klinika Pediatrii Hematologii Onkologii I Endokrynologii Uck*

⁸*Centrum Pediatrii I Onkologii*

⁹*Wssd*

¹⁰*Swietokrzyskie Centrum Pediatrii*

¹¹*CM Uj*

¹²*Sk Przemienienia Panskiego*

Background: Supportive therapy is one of the crucial issues in achieving success of chemotherapy in pediatric hematology and oncology (PHO) or hematopoietic stem cell transplantation (HSCT). Prophylaxis and therapy of invasive fungal disease (IFD) is a key factor in preventing deaths from infectious complications. The objective of the study is the analysis of epidemiology of invasive fungal disease (IFD) over a period of four years in children undergoing chemotherapy or HSCT, with respect to national program of antifungal prophylaxis.

Material/methods: All children newly diagnosed for malignancy or undergoing HSCT between 1.01.2012-31.12.2015 were analyzed for IFD. Ministry of Health in Poland introduced the refund by National Health System (NFZ) the use of posaconazole for prophylaxis in children on chemotherapy for acute myeloid leukemia (AML), high-risk or relapsed acute lymphoblastic leukemia (ALL), myelodysplastic syndromes (MDS), in graft-versus-host disease (GVHD) after HSCT (1-May-2014), and in secondary prophylaxis after HSCT (1-September-2014). Fungal infections were diagnosed and reported by each center and data were analyzed centrally. The diagnosis of IFD was made according to EORTC/MSG criteria as proven, probable or possible.

Results: A total number of 3,614 children with newly diagnosed malignancy and 650 undergoing HSCT were included into the study. The number of episodes of probable/proven IFD in all children with malignancy decreased from 0.054/patient in 2012-2013 to 0.033/patient ($p < 0.01$) in 2014-2015. The number of episodes of probable/proven IFD in patients with AML decreased from 0.26/patient in 2012-2013 to 0.14/patient in 2014-2015 ($p = ns$); and in ALL from 0.09/patient to 0.05/patient ($p < 0.05$) in respective periods. The incidence of probable/proven IFD in patients with AML decreased from 19.7% in 2012-2013 to 10.8% (ns) in 2014-2015; and in ALL from 6.7% to 4.9% (ns) in respective periods. In the same periods, the number of episodes of probable/proven IFD in patients undergoing allo-HSCT decreased from 0.25/patient to 0.13/patient ($p = 0.002$), and the incidence of probable/proven IFD for patients undergoing allo-HSCT decreased from 15.5% to 11.6% (ns).

Conclusions: With introduction of prophylactic program with posaconazole, the number of episodes of invasive fungal disease has significantly decreased in children with malignancy or undergoing hematopoietic stem cell transplantation.