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Pediatric Oncology Abstract Categories

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EVALUATION OF VIRAL RESPIRATORY TRACT INFECTIONS IN PEDIATRIC HEMATOLOGY-ONCOLOGY PATIENTS BEFORE COVID-19 PANDEMY

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Objective: Respiratory viruses are an important cause of morbidity and mortality in pediatric hematology oncology patients. We aimed to determine the infection rate, clinical and epidemiological characteristics of respiratory viruses in pediatric patients with hemato-oncological malignancy, aplastic anemia and congenital neutropenia and to show how these viruses affect the primary disease course and treatment. **Methodology:** Between August 2015 and December 2018, 97 patients aged between 5 months and 215 months who were admitted to Istanbul University, Istanbul Faculty of Medicine, Department of Pediatric Haematology-Oncology with acute respiratory tract infection findings and diagnosed with Haemato-Oncological Malignancy, Congenital Neutropenia, Aplastic Anaemia and who had viral respiratory panel were retrospectively analysed. In the viral respiratory panel test, nasal swab samples of the patients were evaluated by RT-multiplex PCR method. SPSS (Statistical Package for the Social Sciences) 22.0 programme was used for statistical analyses **Results:** A total of 97 patients, 52 males (53.6%) and 45 females (46.4%), aged between 5 months and 215 months (78.81±60.17 months, median 60 months) were included in

the study. The most common viral respiratory panel (VRP) positivity was observed between 5 months and 208 months and the mean age was 85.49±61.73 months (median=81 months). Although 44.3% (n=43) of the patients presented in winter and 23.7% (n=23) in autumn, VRP positivity was more common in patients presenting in spring (n=43, 70%) and winter (n=22, 51.2%) seasons. When the VRP results of the patients were analysed; 50.5% (n=49) were positive; 39.2% (n=38) were mono-infection, 11.3% (n=11) were co-infection and 49.5% (n=48) were negative. When we looked at the VRP results, rhinovirus (hRV) was the most common virus with a frequency of 22.4% (n=11). Other viruses were Respiratory Syncytial Virus (RSV) A/B (14.2% n=7), Parainfluenza (14.2% n=7), Influenza (8.2% n=4), Coronavirus (8.2% n=4), Metapneumovirus (2.1% n=1), Mycoplasma pneumonia (6.1% n=3). Among the co-infections seen in a total of 11 patients, hRV and RSV A/B were the most common viruses accompanying other viruses with a rate of 63.6% (n=7). Among a total of 67 patients who were in various stages of CT and whose treatment was completed, the most common VRP positivity was seen in patients in the induction phase with a rate of 28.3% (n=19). Of the 12 patients with co-infection, 5 (41.6%) were in the induction phase. Cough (n=59 60.8%) and fever (n=47 48.5%) were the most common presenting complaints, accompanied by wheezing (n=17 17.5%), respiratory distress (n=11 11.3%), diarrhoea/vomiting (n=9 9.3%) and muscle pain (n=9 9.3%). VRP was positive in 43.9% of patients presenting with fever. The most common hRV virus was found most frequently in spring and winter seasons. Viral respiratory infection positivity was most frequently seen in ALL (n=16 33.3%), second most frequently in Hodgkin's Lymphoma (n=5 10.5%) and Neuroblastoma (n=5 10.5%). Among the patients, upper respiratory tract infection (URTI) (74.2%, n=72) was more common than lower respiratory tract infection (LRTI) (25.8%, n=25). The rate of LRTI in co-infections (28.0%, n=14) was higher than the rate of URTI (6.9%, n=5) and was statistically significant (p=0.021). When hemogram and biochemistry results were analysed, although neutropenia (50.5%) and lymphopenia (50.5%) were observed at a high rate in patients with positive VRI, they were not statistically significant when compared with VRP positivity. Of the patients with VRP positivity (50.5% n=49), 34.6% (n=17) required hospitalisation due to viral respiratory infection. Of the patients included in the study, 4 patients need intensive care unit due to bacterial pneumonia (Mycoplasma pneumonia and Pneumocystis jirovecii), bleeding into a mass (hepatoblastoma) and pericardial effusion (peripheral T cell lymphoma). In 7 patients whose chemotherapy duration was prolonged, the duration of treatment prolongation ranged between 4 and 60 days (mean 19.29±20.69 and median 10 days). No VRI-related mortality was observed among the patients during the follow-up period. **Conclusion:** Identification of respiratory viruses in pediatric hematology oncology patients contributes to the management of their primary disease.

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