RISK FACTORS ASSOCIATED WITH SEVERE NEUTROPENIA IN INFANTS WITH CONGENITAL CYTOMEGALOVIRUS INFECTION TREATED WITH GANCICLOVIR/VALGANCICLOVIR (PV0371)

Topic
AS06. Infections in early life

Authors
Papaevangelou V. [1, 2], Blázquez-Gamero D. [3], MAVRIDI A. [1], Pedrero R. [4], Baquero-Artigao F. [5], Rodríguez-Molino P. [5], Noguera A. [6], Ríos-Barnes M. [7], Saavedra-Lozano J. [8], López E.R. [4], Frick M.A. [9], Garrote E. [10], Cuadrado I. [11], Tagarro A. [12], Herrero S. [13], Fenoy M. [14], Moliner E. [15], Calavia O. [16], Lombardi G. [17], Ruiz A.M. [18, 19], Carazo B. [20], Porta R. [21], Castells L. [22], Castillo E.D. [23], Colino E. [24], Sánchez M. [25], Alonso-Ojembarrena A. [26], Olabarrieta I. [27], Romero D. [28], González N. [29], Reis-Melo A. [30], Gkentzi D. [31], Couceiro J.A. [32], Vives-Oñós I. [33], Villaverde S. [34], Buxmann H. [35], Drysdale S.B. [36], Lyall H. [37]

Affiliations
1 - National and Kapodistrian University of Athens (Greece), 2 - "ATTIKON" UNIVERSITY HOSPITAL (Greece), 3 - 12 de Octubre University Hospital, Madrid, Spain (Spain), 4 - Instituto de Investigación Hospital 12 de Octubre (Spain), 5 - Hospital Universitario La Paz (Spain), 6 - 4. Hospital Sant Joan de Déu (Spain), 7 - Hospital Sant Joan de Deu (Spain), 8 - Hospital Universitario Gregorio Marañón (Spain), 9 - Hospital Universitari Vall d'Hebron (Spain), 10 - Hospital de Basurto (Spain), 11 - Hospital Universitario de Getafe (Spain), 12 - Fundación para la Investigación Hospital Universitario Infanta Sofía y del Henares (Spain), 13 - Hospital Son Llatzer (Spain), 14 - Consorci Sanitari de Terrasa (Spain), 15 - Hospital de la Santa Creu i Sant Pau. (Spain), 16 - Hospital Joan XIII (Spain), 17 - Fondazione IRCCS Policlinico S.Matteo (Italy), 18 - 13. Hospital Clínico Universitario Virgen de la Arrixaca (Spain), 19 - Hospital Clínico Universitario Virgen de la Arrixaca (Spain), 20 - H. Materno-Infantil H. Regional Universitario de Málaga (Spain), 21 - Hospital Universitari Dexeus. Grupo Quironsalud (Spain), 22 - Hospital Universitari General de Catalunya, Grupo Quirónsalud (Spain), 23 - Hospital Infanta Cristina Badajoz (Spain), 24 - Complejo Hospitalario Universitario Insular-Materno Infantil de Las Palmas de Gran Canaria (Spain), 25 - Hospital Universitario Puerta de Hierro (Spain), 26 - Hospital Puerta del Mar (Spain), 27 - Hospital Severo Ochoa de Leganés (Spain), 28 - Hospital Universitario Nuestra Señora de Candelaria (Spain), 29 - Hospital Universitario de Canarias (Spain), 30 - Centro Hospitalar Universitário São João (Portugal), 31 - General University Hospital of Patras (Greece), 32 - Hospital de Pontevedra (Spain), 33 - Hospital Quironsalud Barcelona (Spain), 34 - 12 de Octubre University Hospital (Spain), 35 - Main-Kinzig Clinics (Germany), 36 - St George's, University of London (United Kingdom), 37 - Imperial College Healthcare NHS Trust (United Kingdom)

Backgrounds:
Neutropenia is a common adverse event associated with ganciclovir and valganciclovir treatment in infants with congenital cytomegalovirus infection (cCMV). Severe neutropenia, often leads to treatment discontinuation, as it puts the patient at risk of invasive bacterial infection.

Methods
A multicenter retrospective study was performed within the European cCMVnet registry, including patients from Spain, Greece, Italy and Portugal. Severe neutropenia during antiviral treatment was defined as an absolute neutrophil count (ANC) below 500 cells/mm^3. Management with antiviral treatment was according to national and international guidelines. Maternal demographic and clinical data as well as somatometric, clinical and laboratory infant data were extracted from the cCMVnet registry. The prevalence of risk factors (clinical and laboratory) between infants with and without neutropenia was compared and logistic regression analysis was applied with neutropenia as the dependent variable.

Results:
517 infants with cCMV who received antivirals since 2011 were included. Most infants were treated with oral valganciclovir alone (280; 54.2%), while 29 received IV ganciclovir and 208 combination of both. Overall, 95 infants (18.4%) presented with severe neutropenia. Severe neutropenia was associated with gestational age at birth ($p<0.001$), birthweight (BW) ($p<0.001$), birth head circumference ($p<0.001$), BW <1500 grs ($p<0.001$) and ANC at birth ($p=0.001$). Severe neutropenia was not associated with gestational age at maternal CMV infection, abnormalities in cranial ultrasonography, occurrence of SNHL at birth, blood CMV viral load at birth. Ganciclovir treatment for >14 days, prematurity (GA <36 weeks) and lower pre-treatment ANC were strongly associated with the development of neutropenia.

Conclusions/Learning Points:
Development of severe neutropenia during antiviral treatment was associated with ganciclovir treatment for more than 14 days, prematurity and low baseline neutrophil count. Identifying risk factors will enable better parental anticipatory guidance.