AB012. The potential role of innate lymphoid cells in thymic epithelial tumors

Mariarosaria Saponaro[1#], Erica Pietroluongo[1#], Giuseppe Ercolano[2,3,4], Pietro De Placido[1], Rocco Morra[1], Annarita Peddio[1], Angela Grieco[1], Giuseppe Neola[1], Anna Piscopo[1], Vitantonio Del Deo[5], Margaret Ottaviano[6], Marianna Tortora[7], Evelina La Civita[8], Gianluigi Carbone[8], Daniela Terracciano[8], Sabino De Placido[1,7], Giovannella Palmieri[7], Mario Giuliano[1,7]

[1]Department of Clinical Medicine and Surgery, University of Naples Federico II, Naples, Italy; [2]Department of Pharmacy, School of Medicine, University of Naples Federico II, Naples, Italy; [3]Department of Pathology and Immunology, University of Geneva, Geneva, Switzerland; [4]Ludwig Institute for Cancer Research Lausanne, University of Lausanne, Lausanne, Switzerland; [5]Department of Onco-Haematology, Imaging and Morphological Diagnostics, and Forensic Medicine, University Hospital Federico II, Naples, Italy; [6]Unit of Melanoma, Cancer Immunotherapy and Development Therapeutics, Italian National Cancer Institute-IRCCS Pascale Foundation, Naples, Italy; [7]Rare Tumors Coordinating Center of Campania Region (CRCTR), Naples, Italy; [8]Department of Translational Medical Sciences, University of Naples Federico II, Naples, Italy

[#]These authors contributed equally to this work as co-first authors.

Correspondence to: Mario Giuliano, MD, PhD. Professor of Medical Oncology, Department of Clinical Medicine and Surgery, University of Naples Federico II, Via S. Pansini, 5, Napoli 80131, Italy.
Email: mario.giuliano@unina.it.

Background: Thymic epithelial tumors (TETs) are rare and complex neoplasms, which are often associated with paraneoplastic syndromes and autoimmune disorders. Innate lymphoid cells (ILCs) are innate cells that play a role in epithelial integrity and immune response. Several studies suggested a potential role of ILCs and their subsets (ILC1, ILC2 and ILC3) in the promotion or inhibition of tumor growth. The aim of our study is to demonstrate the presence and role of ILCs in TET patients.

Methods: Peripheral blood mononuclear cells (PBMCs) were isolated by density gradient centrifugation from healthy donors (HDs) and TET patients and ILCs frequency was assessed by flow cytometry. Serum was also collected after centrifugation of whole blood and cytokines were measured using Legendplex™ bead-based immunoassays.

Results: From May 2022 to January 2023, 32 patients were enrolled at Rare Tumors Coordinating Center of Campania Region (CRCTR, Naples, Italy); we reported preliminary data of 11 out of 32 patients. Of these,7 patients were affected by thymoma, 4 patients by thymic carcinoma; 3 patients had evidence of disease (ED), 8 patients had no evidence of disease (NED); 7 patients had concomitant autoimmune disorders. The presence of ILCs was found in all these patients. ILCs levels were higher than the median of healthy donors in 7 pts (63.6%). No significant difference was found in ED/NED patients and in patients with/without autoimmune disorders. In addition, we found that in most patients the levels of circulating cytokines were increased. IL-15 level was increased in 9 patients (81.8%); IL-18 level was increased in 10 patients (90.9%); IL-11 level was increased in 5 patients (45.4%); IL-33 level was increased in 6 patients (54.5%). Cytokines levels were increased both in patients with and without autoimmune disorders, both in patients with ED and NED.

Conclusions: To the best of our knowledge, we demonstrated for the first time the presence of ILCs and of their different subsets (ILC1, ILC2 and ILC3) in TET patients. A study on a larger population is ongoing at our Rare Tumors Coordinating Center to evaluate the association of ILCs and clinical characteristics.

Keywords: Thymic epithelial tumors (TETs); innate lymphoid cells (ILCs); cytokines

Acknowledgments

The authors would like to acknowledge the European Reference Network (ERN-EURACAN) as a powerful resource for transnational collaboration in rare cancers. Clinical research activities were performed by E.P. and P.D.P. within the PhD Program in Advanced Biomedical and Surgical Therapies at Department of Clinical Medicine and Surgery, University of Naples Federico II, Naples, Italy. P.D.P. is supported by an American-Italian Cancer Foundation Post-Doctoral Research Fellowship, year 2023–2024.
Funding: None.

Footnote

Conflicts of Interest: All authors have completed the

© Mediastinum. All rights reserved.

ICMJE uniform disclosure form (available at https://med.amegroups.com/article/view/10.21037/med-23-ab012/coif). P.D.P. is supported by an American-Italian Cancer Foundation Post-Doctoral Research Fellowship, year 2023–2024. P.D.P. also reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Lilly, Gilead, MSD, Roche, Exact Sciences, Novartis, and support for attending meetings and/or travel from Gilead, Lilly, Istituto Gentili, MSD. M.O. reports speakers fee and travel accomodation from MSD, NOVARTIS, BMS, Sanofi Regeneron, Amgen. S.D.P. reports consulting fees from Astrazeneca, Novartis, Pfizer, Roche, Daiichi Sankyo, Lilly, Clovis, Seagen, GSK, MSD, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Astrazeneca, Novartis, Pfizer, Roche, Daiichi Sankyo, Lilly, Clovis, Seagen, GSK, MSD. M.G. reports consulting fees from Roche, AstraZeneca, Lilly, Daichii Sankyo, Novartis, Pfizer, Seagen, MSD, Eisai, honoraria from Novartis, Pfizer, Lilly, AstraZeneca, Daichii Sankyo, and travel/accommodation expenses from Lilly, Pfizer, AstraZeneca. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was approved by the Ethics Committee of the University of Naples Federico II (approval n. 107/05/ESI) and informed consent was obtained from all individual participants.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: https://creativecommons.org/licenses/by-nc-nd/4.0/.

doi: 10.21037/med-23-ab012

Cite this abstract as: Saponaro M, Pietroluongo E, Ercolano G, De Placido P, Morra R, Peddio A, Grieco A, Neola G, Piscopo A, Del Deo V, Ottaviano M, Tortora M, La Civita E, Carbone G, Terracciano D, De Placido S, Palmieri G, Giuliano M. AB012. The potential role of innate lymphoid cells in thymic epithelial tumors. Mediastinum 2023;7:AB012.

© Mediastinum. All rights reserved.