

RESEARCH TOPIC CLI27

Identifying clinical phenotypes and endotypes in bronchiectasis patients

Clinical Unit name

Respiratory Unit

IRCCS – Humanitas Research Hospital

Supervisor

Stefano Aliberti

stefano.aliberti@hunimed.eu

Abstract

Bronchiectasis (BE) is a prevalent chronic respiratory disease with an attributable mortality. Humanitas hosts the largest clinical BE Program in the country and is the leading center of both the Italian (>1,300 patients) and the European (>17,000 patients) Registry and biobank of BE, as well as the national coordinator center of the Italian registry (>1,000 patients) of non-tuberculous mycobacteria (NTM). No drugs have been approved so far by FDA for BE because of failing of major international trials that were not able to address the complex disease heterogeneity. The PhD research activities will aim at identifying clinical phenotypes (such as patients with NTM) and endotypes, as disease treatable traits, among BE adults enrolled in the Program and across the different registries and biobank. The application of a treatable traits approach will contribute to a more personalized management of BE patients and to improve their outcomes.markers linked to different degrees of risk of OA progression after meniscectomy.

Scientific references

1. Aliberti S, Goeminne PC, O'Donnell AE, Aksamit TR, Al-Jahdali H, Barker AF, Blasi F, Boersma WG, Crichton ML, De Soyza A, Dimakou KE, Elborn SJ, Feldman C, Tiddens H, Haworth CS, Hill AT, Loebinger MR, Martinez-Garcia MA, Meerburg JJ, Menendez R, Morgan LC, Murris MS, Polverino E, Ringshausen FC, Shtenberg M, Sverzellati N, Tino G, Torres A, Vandendriessche T, Vendrell M, Welte T, Wilson R, Wong CA, Chalmers JD. Criteria and definitions for the radiological and clinical diagnosis of bronchiectasis in adults for use in clinical trials: international consensus recommendations. Lancet Respir Med. 2022 Mar;10(3):298-306.
2. Chalmers JD, Polverino E, Crichton ML, Ringshausen FC, De Soyza A, Vendrell M, Burgel PR, Haworth CS, Loebinger MR, Dimakou K, Murris M, Wilson R, Hill AT, Menendez R, Torres A, Welte T, Blasi F, Altenburg J, Shtenberg M, Boersma W, Elborn JS, Goeminne PC, Aliberti S; EMBARC Registry Investigators. Bronchiectasis in Europe: data on disease characteristics from the European Bronchiectasis registry (EMBARC). Lancet Respir Med. 2023 Apr 24:S2213-2600(23)00093-0.

3. Dhar R, Singh S, Talwar D, Mohan M, Tripathi SK, Swarnakar R, Trivedi S, Rajagopala S, D'Souza G, Padmanabhan A, Baburao A, Mahesh PA, Ghewade B, Nair G, Jindal A, Jayadevappa GDH, Sawhney H, Sarmah KR, Saha K, Anantharaj S, Khanna A, Gami S, Shah A, Shah A, Dutt N, Garg H, Vyas S, Venugopal K, Prasad R, Aleemuddin NM, Karmakar S, Singh V, Jindal SK, Sharma S, Prajapat D, Chandrashekaria S, McDonnell MJ, Mishra A, Rutherford R, Ramanathan RP, Goeminne PC, Vasudev P, Dimakou K, Crichton ML, Jayaraj BS, Kungwani R, Das A, Sawhney M, Polverino E, Torres A, Gulecha NS, Shteinberg M, De Soyza A, Mangala A, Shah P, Chauhan NK, Jajodia N, Singhal A, Batra S, Hasan A, Limaye S, Salvi S, Aliberti S, Chalmers JD. Bronchiectasis in India: results from the European Multicentre Bronchiectasis Audit and Research Collaboration (EMBARC) and Respiratory Research Network of India Registry. *Lancet Glob Health.* 2019 Sep;7(9):e1269-e1279.
4. McDonnell MJ, Aliberti S, Goeminne PC, Restrepo MI, Finch S, Pesci A, Dupont LJ, Fardon TC, Wilson R, Loebinger MR, Skrbic D, Obradovic D, De Soyza A, Ward C, Laffey JG, Rutherford RM, Chalmers JD. Comorbidities and the risk of mortality in patients with bronchiectasis: an international multicentre cohort study. *Lancet Respir Med.* 2016 Dec;4(12):969-979.
5. Keir HR, Shoemark A, Dicker AJ, Perea L, Pollock J, Giam YH, Suarez-Cuartin G, Crichton ML, Lonergan M, Oriano M, Cant E, Einarsson GG, Furrie E, Elborn JS, Fong CJ, Finch S, Rogers GB, Blasi F, Sibila O, Aliberti S, Simpson JL, Huang JTJ, Chalmers JD. Neutrophil extracellular traps, disease severity, and antibiotic response in bronchiectasis: an international, observational, multicohort study. *Lancet Respir Med.* 2021 Aug;9(8):873-884.
6. Polverino E, Goeminne PC, McDonnell MJ, Aliberti S, Marshall SE, Loebinger MR, Murris M, Cantón R, Torres A, Dimakou K, De Soyza A, Hill AT, Haworth CS, Vendrell M, Ringshausen FC, Subotic D, Wilson R, Vilaró J, Stallberg B, Welte T, Rohde G, Blasi F, Elborn S, Almagro M, Timothy A, Ruddy T, Tonia T, Rigau D, Chalmers JD. European Respiratory Society guidelines for the management of adult bronchiectasis. *Eur Respir J.* 2017 Sep 9;50(3):1700629.
7. Narayana JK, Aliberti S, Mac Aogáin M, Jaggi TK, Ali NABM, Ivan FX, Cheng HS, Yip YS, Vos MIG, Low ZS, Lee JXT, Amati F, Gramegna A, Wong SH, Sung JJY, Tan NS, Tsaneva-Atanasova K, Blasi F, Chotirmall SH. Microbial Dysregulation of the Gut-Lung Axis in Bronchiectasis. *Am J Respir Crit Care Med.* 2023 Apr 1;207(7):908-920.
8. Aliberti S, Masefield S, Polverino E, De Soyza A, Loebinger MR, Menendez R, Ringshausen FC, Vendrell M, Powell P, Chalmers JD; EMBARC Study Group. Research priorities in bronchiectasis: a consensus statement from the EMBARC Clinical Research Collaboration. *Eur Respir J.* 2016 Sep;48(3):632-47.



9. Aliberti S, Lonni S, Dore S, McDonnell MJ, Goeminne PC, Dimakou K, Fardon TC, Rutherford R, Pesci A, Restrepo MI, Sotgiu G, Chalmers JD. Clinical phenotypes in adult patients with bronchiectasis. *Eur Respir J*. 2016 Apr;47(4):1113-22.
10. Gramegna A, Narayana JK, Amati F, Stainer A, Wu B, Morlacchi LC, Segal LN, Tsaneva-Atanasova K, Marchisio P, Chotirmall SH, Blasi F, Aliberti S. Microbial Inflammatory Networks in Bronchiectasis Exacerbators With *Pseudomonas aeruginosa*. *Chest*. 2023 Feb 17:S0012-3692(23)00259-3.

Type of contract

PhD scholarship of € 22.400 gross per year awarded by Humanitas University. This sum is exempt from IRPEF income tax according to the provisions of art. 4 of Law no. 476 of 13th August 1984, and is subject to social security contributions according to the provisions of art. 2, section 26 and subsequent sections, of Law no. 335 of 8th August 1995 and subsequent modifications.

Borsa di dottorato pari a € 22.400 annui lordi erogata da Humanitas University. Importo non soggetto a tassazione IRPEF a norma dell'art. 4 della L. 13 agosto 1984 n. 476 e soggetto, in materia previdenziale, alle norme di cui all'art. 2, commi 26 e segg., della L. 8 agosto 1995, n. 335 e successive modificazioni.