

**CURRICULUM VITAE: Carlo Salvarani, M.D.****Date of birth:** November 14, 1954.**Birthplace:** Reggio Emilia, Italy.**Address:**

Home: Via dal Verme N3, 42100 Reggio Emilia, Italy.

Office: Rheumatologic Unit, Azienda Ospedaliera Arcispedale S.Maria Nuova, V.le Umberto 1° N50, 42100 Reggio Emilia, and Azienda Universitaria Ospedaliera di Modena, Modena, Italy.

**Degrees:**

M.D., 1980, University of Parma.

Specialized in Internal Medicine, 1985, University of Parma.

Specialized in Rheumatology, 1989, University of Ferrara.

**Honor Awards:**

M.D., Magna cum Laude, 1980, University of Parma.

Awarded a post-graduate grant in Internal Medicine, 1980-81, Department of Medicine, Reggio Emilia Hospital.

Specialized in Rheumatology, Magna cum Laude, 1989, University of Ferrara.

Member of the "Scientific Programme Committee" dell'EULAR (the European League against Rheumatism) from 2013 to 2016

Honorary President 17th International Conference on Behçet's Disease

Member Scientific Committee "Foundation for Research in Rheumatology" (FOREUM) from 2016

Edward W. Boland Rheumatology Named Visiting Professor e Edward W. Boland Lecture, Division of Rheumatology, Mayo Foundation, Mayo Clinic, Rochester, MN, 21/7/2017.

Co-chair vasculitis non-ANCA sessions, ACR/ARP Annual Meeting, from 2019.

Coordinator Study Group on Vasculitis of Italian Society of Rheumatology (SIR), from 2019.

Research Collaborator, Mayo Clinic, Rochester, MN, USA, from 2019

Rank 69 in the list of Top Italian Scientist in Clinical Sciences with 110 of H-index.

**Abilitazione Scientifica Nazionale**

idoneità/abilitazione fascia professore ordinario settore concorsuale 06/D3 - MALATTIE DEL SANGUE, ONCOLOGIA E REUMATOLOGIA (Bando 2012)

**Postgraduate Experiences:**

1980-81: Internship in Internal Medicine, Department of Medicine, Reggio Emilia Hospital.

1981-82: Full Time Assistant in Internal Medicine, Department of Medicine, Castelnovo Monti (RE) Hospital.

1982-85: Full Time Assistant in Internal Medicine, Department of Medicine, Reggio Emilia Hospital.

1985-96: Full Time Assistant in Internal Medicine and Rheumatology, Rheumatologic Unit, Department of Medicine, Reggio Emilia Hospital.

January 1993- January 1994 and July-August 1994, 1995, 1996, 1997, 1999, 2001, 2004, 2005-2019: Visiting Clinician, Division of Rheumatology or Division of Neurology, Mayo Clinic, Rochester, MN, USA.

December 2017 – January 2022: Director, Division of Rheumatology, Azienda Ospedaliera Universitaria di Modena, Modena

1997- : Director, Division of Rheumatology, Reggio Emilia, Hospital.

December 2017- : full Professor of Rheumatology, Università di Modena e Reggio Emilia.

2019: Research Collaborator, Mayo Clinic, Rochester, MN, USA

**Current Position:** Director, Division of Rheumatology, Azienda USL-IRCCS di Reggio Emilia, Reggio Emilia and full Professor of Rheumatology at the Università di Modena e Reggio Emilia.

**Memberships:**

Italian Society of Rheumatology.

Italian Society of Internal Medicine.

American College of Rheumatology (International Member).

ASessment in Ankylosing Spondylitis (ASAS) Working Group

Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA)

European Vasculitis Study Group (EUVAS)

International Society for Behçet's Disease (ISBD)

**Editorial board:**

Arthritis Care & Research (until 2006)

Current Opinion in Rheumatology (until 2011)

Clinical and Experimental rheumatology (guest editor of vasculitis supplement)

Rheumatic & Musculoskeletal Diseases Open (EULAR Journal)

Autoimmunity Reviews

**Reviewer of International Journal:**

Journal of Rheumatology

Clinical and Experimental Rheumatology

Arthritis & Rheumatism

Arthritis Care & Research

Scandinavian Journal of Rheumatology

Rheumatology

The Annals Of Rheumatic Diseases

JAMA

Circulation

Lancet

**Research interests:**

Vasculitis: giant cell arteritis, Takayasu arteritis, chronic periaortitis, Behçet's disease, isolated central nervous system vasculitis

Elderly onset rheumatoid arthritis, polymyalgia rheumatica, RS3PE syndrome

Psoriatic arthritis, spondyloarthropathies

### **National and International Research Projects**

- 1) Principal Investigator of the Research Project (ricerca finalizzata Italiana 2009) titled " Diagnosis and treatment of inflammatory arthropathies in the Regione Emilia Romagna: a prospective population-based study".
- 2) Principal Investigator of the Pfizer International Research Project titled: "A genome-wide association study of psoriatic arthritis in Italian population".
- 3) Co-Investigator of the research project (ricerca finalizzata Italiana) 2010 titled: "Prognostic value of a combined panel of soluble and genetic biomarkers in patients with early arthritis".
- 4) Co-Investigator, EURONANOMED II JOINT TRANSNATIONAL CALL FOR PROPOSALS (2016) FOR "EUROPEAN INNOVATIVE RESEARCH & TECHNOLOGICAL DEVELOPMENT PROJECTS IN NANOMEDICINE, Project title:" Antidrug-antibody and drug Molecular detection in Inflammatory diseases and Cancer with organic bioelectronics", acronym: AMICA, duration: 36 months.
- 5) Principal Investigator and Winner of the 1<sup>st</sup> Edition of the research call "Roche per la ricerca" Rheumatology thematic area with the project " Biomarcatori prognostici di risposta alla terapia in pazienti con arterite a cellule giganti".
- 6) Co-Investigator of the research project (Bando Ricerca Finalizzata 2018, Ministero della Salute) "Autoantibodies against specific human self-proteins as new diagnostic and prognostic biomarkers for Giant Cell Arteritis and Polymyalgia Rheumatica?".
- 7) Principal investigator of the research project (Bando Ricerca Finalizzata 2019, Ministero della salute) "Development of advanced therapy medicinal products for rheumatoid arthritis based on mesenchymal stem cells.
- 8) Principal investigator of the research project (Bando Ricerca COVID-19 2020, Ministero della Salute) " Endothelial, neutrophil, and complement perturbation linked to acute and chronic damage in COVID-19 pneumonitis coupled with machine learning approaches.

### **Participation to National/International Guidelines/Recommendations (related manuscripts)**

1. A cura del Gruppo multidisciplinare sui Farmaci Biologici in Reumatologia Regione Emilia-Romagna. Trattamento sistemico dell'Artrite Reumatoide nell'adulto con particolare riferimento ai farmaci biologici. Direzione Generale alla Sanità e alle Politiche Sociali, Regione Emilia Romagna. Linee guida terapeutiche n.2, marzo 2010.
2. A cura del Gruppo multidisciplinare sui Farmaci Biologici in Reumatologia Regione Emilia-Romagna. Trattamento sistemico dell'Artrite Psoriasica nell'adulto con particolare riferimento ai

farmaci biologici. Direzione Generale alla Sanità e alle Politiche Sociali, Regione Emilia Romagna. Linee guida terapeutiche n.7, aprile 2014

3. A cura del Gruppo multidisciplinare sui Farmaci Biologici in Reumatologia Regione Emilia-Romagna. Trattamento farmacologico della spondilite anchilosante e delle spondiloartriti assiali non radiografiche nell'adulto con particolare riferimento ai farmaci biologici. Direzione Generale alla Sanità e alle Politiche Sociali, Regione Emilia Romagna. Linee guida terapeutiche n. 11, febbraio 2016

4. Olivieri I., Salvarani C., Cantini F., et al : Recommendations for starting anti- TNF-alpha in patients with ankylosing spondylitis. *Reumatismo*; 55 :220-3,2003.

5. Salvarani C, Olivieri I, Cantini F, Marchesoni A, Punzi L, Scarpa R, Matucci-Cerinic M. Recommendations for the appropriate use of anti-TNFalpha therapy in patients with psoriatic arthritis. *Italian Rheumatology Society. Reumatismo*. 2004; 56:133-4

6. Salvarani C, Olivieri I, Pipitone N, Cantini F, Marchesoni A, Punzi L, Scarpa R, Matucci-Cerinic M; Italian Society for Rheumatology. Recommendations of the Italian Society for Rheumatology for the use of biologic (TNF-alpha blocking) agents in the treatment of psoriatic arthritis. *Clin Exp Rheumatol*. 2006;24:70-8.

7. Salvarani C, Pipitone N, Marchesoni A, Cantini F, Cauli A, Lubrano E, Punzi L, Scarpa R, Spadaro A, Matucci-Cerinic M, Olivieri I. Recommendations of the Italian Society for Rheumatology for the use of biologic (TNF-alpha blocking) agents in the treatment of psoriatic arthritis: 2009 update. *Clin Exp Rheumatol* 2011; 29(3 Suppl 66):S28-41.

8. Mukhtyar C, Guillevin L, Cid MC, Dasgupta B, de Groot K, Gross W, Hauser T, Hellmich B, Jayne D, Kallenberg CG, Merkel PA, Raspe H, Salvarani C, Scott DG, Stegeman C, Watts R, Westman K, Witter J, Yazici H, Luqmani R; European Vasculitis Study Group. EULAR recommendations for the management of primary small and medium vessel vasculitis. *Ann Rheum Dis*. 2009; 68:310-7.

9. Mukhtyar C, Guillevin L, Cid MC, Dasgupta B, de Groot K, Gross W, Hauser T, Hellmich B, Jayne D, Kallenberg CG, Merkel PA, Raspe H, Salvarani C, Scott DG, Stegeman C, Watts R, Westman K, Witter J, Yazici H, Luqmani R; European Vasculitis Study Group. EULAR recommendations for the management of large vessel vasculitis. *Ann Rheum Dis*. 2009; 68:318-23.

10. Hatemi G, Silman A, Bang D, Bodaghi B, Chamberlain AM, Gul A, Houman MH, Kötter I, Olivieri I, Salvarani C, Sfikakis PP, Siva A, Stanford MR, Stübiger N, Yurdakul S, Yazici H; EULAR Expert Committee. EULAR recommendations for the management of Behçet disease. *Ann Rheum Dis*. 2008; 67:1656-62.

11. Caporali R, Conti F, Alivernini S, Atzeni F, Serio B, Cutolo M, Valesini G, Ferraccioli G, Sarzi-Puttini P, Salvarani C, Guiducci S, Zampogna G, Gremese E, Pipitone N, Scivo R, Bugatti S, Montecucco C, Matucci-Cerinic M, Italian Society for Rheumatology. Recommendations for the use of biologic therapy in rheumatoid arthritis: update from the Italian Society for Rheumatology I. Efficacy. *Clinical and Experimental Rheumatology* 2011;29:S7-14.

12. Pipitone N, Olivieri I, Salvarani C; Italian Society of Rheumatology. Recommendations of the Italian Society of Rheumatology for the treatment of the primary large-vessel vasculitis with biological agents. *Clin Exp Rheumatol* 2012; 30(1 Suppl 70):S139-61.

13. Kalra S, Silman A, Akman-Demir G, Bohlega S, Borhani-Haghighi A, Constantinescu CS, Houman H, Mahr A, Salvarani C, Sfikakis PP, Siva A, Al-Araji A. Diagnosis and management of

Neuro-Behçet's disease: international consensus recommendations. *J Neurol.* 2014; 261(9):1662-76.

14. Dejaco C, Singh YP, Perel P, Hutchings A, Camellino D, Mackie S, Abril A, Bachta A, Balint P, Barraclough K, Bianconi L, Buttgereit F, Carsons S, Ching D, Cid M, Cimmino M, Diamantopoulos A, Docken W, Duftner C, Fashanu B, Gilbert K, Hildreth P, Hollywood J, Jayne D, Lima M, Maharaj A, Mallen C, Martinez-Taboada V, Maz M, Merry S, Miller J, Mori S, Neill L, Nordborg E, Nott J, Padbury H, Pease C, Salvarani C, Schirmer M, Schmidt W, Spiera R, Tronnier D, Wagner A, Whitlock M, Matteson EL, Dasgupta B; European League Against Rheumatism; American College of Rheumatology. 2015 Recommendations for the management of polymyalgia rheumatica: a European League Against Rheumatism/American College of Rheumatology collaborative initiative. *Ann Rheum Dis.* 2015;74(10):1799-807.

15. Gulen Hatemi, Robin Christensen, Dongsik Bang, Bahram Bodaghi, Aykut Ferhat Çelik, Farida Fortune, Julian Gaudric, Ahmet Gül, Ina Kötter, Pietro Leccese, Alfred Mahr, Robert Moots, Yesim Ozguler, David Saadoun, Carlo Salvarani, Francesco Scuderi, Petros Sfikakis, Aksel Siva, Miles Stanford, Ilknur Tugal Tukun, Richard West, Sebahattin Yurdakul, Ignazio Olivieri, Hasan Yazici. Update of the EULAR Recommendations for the Management of Behçet's Syndrome. *Ann Rheum Dis* 2018; 77:808-818.

16. Christian Dejaco, Sofia Ramiro, Christina Duftner, Florent L. Besson, Thorsten A. Bley, Daniel Blockmans, Elisabeth Brouwer, Marco A. Cimmino, Eric Clark, Bhaskar Dasgupta, Andreas P. Diamantopoulos, Haner Direskeneli, Annamaria Iagnocco, Thorsten Klink, Lorna Neill, Cristina Ponte, Carlo Salvarani, Riemer Slart, Madeline Whitlock, Wolfgang A. Schmidt. EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice. *Ann Rheum Dis* 2018; 77:636-643.

17. Slart RHJA; Writing group; Reviewer group; Members of EANM Cardiovascular; Members of EANM Infection & Inflammation; Members of Committees, SNMMI Cardiovascular; Members of Council, PET Interest Group; Members of ASNC; EANM Committee Coordinator. FDG-PET/CT(A) imaging in large vessel vasculitis and polymyalgia rheumatica: joint procedural recommendation of the EANM, SNMMI, and the PET Interest Group (PIG), and endorsed by the ASNC. *Eur J Nucl Med Mol Imaging* 2018;45:1250-1269.

18. Lisa Ehlers, Johan Askling, Johannes W. J. Bijlsma, Maria C. Cid, Maurizio Cutolo, Bhaskar Dasgupta, Christian Dejaco, William G. Dixon, Nils Feltelius, Axel Finckh, Kate Gilbert, Sarah Mackie, Alfred Mahr, Eric L. Matteson, Lorna Neill, Carlo Salvarani, Wolfgang A. Schmidt, Anja Strangfeld, Ronald van Vollenhoven, Frank Buttgereit. EULAR 2018 core set of data to be collected in giant cell arteritis registries and databases. Viewpoints from a EULAR task force. *Ann Rheum Dis* 2019; 78:1160-66.

19. B. Hellmich, AF. Águeda, S. Monti, F. Buttgereit, H. de Boysson, E. Brouwer, R. Cassie, M. C. Cid, B. Dasgupta, C. Dejaco, G. Hatemi, N. Hollinger, A. Mahr, S. Mollan, C. Mukhtyar, C. Ponte, C. Salvarani, R. Sivakumar, X. Tian, G. Tomasson, C. Turesson, W.A. Schmidt, P. M. Villiger, R. A. Watts, C. Young, R. Luqmani. 2018 Update of the EULAR recommendations for the management of large vessel vasculitis. *Ann Rheum Dis* 2020; 79:19-30.

#### **Participation to classification/diagnostic criteria (related manuscripts)**

1. Dasgupta B, Salvarani C, Schirmer M, Crowson CS, Maradit-Kremers H, Hutchings A, Matteson EL; members of the American College of Rheumatology Work Group for Development of Classification Criteria for PMR. Developing classification criteria for polymyalgia rheumatica: comparison of views from an expert panel and wider survey. *J Rheumatol* 2008; 35:270-7.

2. Basu N, Watts R, Bajema I, Baslund B, Bley T, Boers M, Brogan P, Calabrese L, Cid MC, Cohen-Tervaert JW, Flores-Suarez LF, Fujimoto S, de Groot K, Guillevin L, Hatemi G, Hauser T, Jayne D, Jennette C, Kallenberg CG, Kobayashi S, Little MA, Mahr A, McLaren J, Merkel PA, Ozen S, Puechal X, Rasmussen N, Salama A, Salvarani C, Savage C, Scott DG, Segelmark M, Specks U, Sunderkötter C, Suzuki K, Tesar V, Wiik A, Yazici H, Luqmani R. EULAR points to consider in the development of classification and diagnostic criteria in systemic vasculitis. *Ann Rheum Dis*. 2010;69:1744-50.
  
3. Dasgupta B, Cimmino MA, Maradit-Kremers H, Schmidt WA, Schirmer M, Salvarani C, Bachta A, Dejaco C, Duftner C, Jensen HS, Duhaut P, Poór G, Kaposi NP, Mandl P, Balint PV, Schmidt Z, Iagnocco A, Nannini C, Cantini F, Macchioni P, Pipitone N, Amo MD, Espígol-Frigolé G, Cid MC, Martínez-Taboada VM, Nordborg E, Direskeneli H, Aydin SZ, Ahmed K, Hazleman B, Silverman B, Pease C, Wakefield RJ, Luqmani R, Abril A, Michet CJ, Marcus R, Gonter NJ, Maz M, Carter RE, Crowson CS, Matteson EL. 2012 provisional classification criteria for polymyalgia rheumatica: a European League Against Rheumatism/American College of Rheumatology collaborative initiative. *Ann Rheum Dis* 2012; 71:484-92.
  
4. International Team for the Revision of the International Criteria for Behçet's Disease (ITR-ICBD). The International Criteria for Behçet's Disease (ICBD): a collaborative study of 27 countries on the sensitivity and specificity of the new criteria. *J Eur Acad Dermatol Venereol* 2014; 28:338-47.
  
5. Macchioni P, Boiardi L, Catanoso M, Pazzola G, Salvarani C. Performance of the new 2012 EULAR/ACR classification criteria for polymyalgia rheumatica: comparison with the previous criteria in a single-centre study. *Ann Rheum Dis* 2014; 73:1190-3.
  
6. Linklater H, Pipitone N, Rose MR, Norwood F, Campbell R, Salvarani C, Scott DL, Gordon P. Classifying idiopathic inflammatory myopathies: comparing the performance of six existing criteria. *Clin Exp Rheumatol* 2013; 31:767-9.
  
7. Quartuccio L, Isola M, Corazza L, Ramos-Casals M, Retamozo S, Ragab GM, Zoheir MN, El-Menyawi MA, Salem MN, Sansonno D, Ferraccioli G, Gremese E, Tzioufas A, Voulgarelis M, Vassilopoulos D, Scarpato S, Pipitone N, Salvarani C, Guillevin L, Terrier B, Cacoub P, Filippini D, Saccardo F, Gabrielli A, Fraticelli P, Sebastiani M, Tomsic M, Tavoni A, Mazzaro C, Pioltelli P, Nishimoto N, Scaini P, Zignego AL, Ferri C, Monti G, Pietrogrande M, Bombardieri S, Galli M, De Vita S. Validation of the classification criteria for cryoglobulinaemic vasculitis. *Rheumatology (Oxford)* 2014; 53:2209-13.

### **Textbooks**

Calamia KT and Salvarani C. Miscellaneous vasculitis (Behçet's disease, primary angiitis of the central nervous system, Cogan's syndrome, and erythema elevatum diutinum). *Primer on the Rheumatic Diseases*. Thirteenth Edition. Edited by JH Klippel, JH Stone, LJ Crofford, and PH White. Springer and Arthritis Foundation. ISBN: 978-0-387-35664-9

Pipitone N, Hazleman B, Salvarani C. Polymyalgia rheumatica and giant cell arteritis. *EULAR Compendium on Rheumatic Diseases*. First Edition. Editor JWJ Bijlsma. BMJ Publishing Group and European league Against Rheumatism 2009. ISBN 978-1-905545-35-3

Salvarani C, J Rueda J, Gonzalez-Gay MA. Polymyalgia rheumatica. *EULAR Textbook on Rheumatic Diseases*. First Edition. Editor JWJ Bijlsma. BMJ Group and European league Against Rheumatism 2012. ISBN 978-1-905545-08-7

Pipitone N, Versari A, Salvarani C. Large-vessel vasculitis. Oxford Textbook of Rheumatology 4th edition. Editors: Richard Watts, Philip Conaghan, Christopher Denton, Helen Foster, John Isaacs & Ulf Müller-Ladner. Oxford University Press 2013. ISBN 978-0-19-964248-9

Salvarani C, Ciccia F, Pipitone N. Polymyalgia Rheumatica and Giant Cell Arteritis. 7th Edition of Rheumatology. Editors: Hochberg MC, Silman AJ, Smolen JS, Weinblatt ME, Weisman MH. Elsevier Mosby, 2018.

Salvarani C, Hunder GG, Brown R Jr. Adult Primary central nervous System Vasculitis. Editors: Wijdicks EFM, Freeman WD, Rabinstein AA, Mayo Clinic Neurocritical Care and Intensive Care Board. Mayo Clinic Scientific Press and Oxford University Press, 2019.

### **Scientific Publications**

Prof. Salvarani is Author of 820 publications prevalently on Rheumatology, Immunology, Neurology and Internal Medicine journals of medium/high impact factor with some articles on very high impact factor journals (Lancet, New England Journal of Medicine, JAMA Internal Medicine and Annals of Internal Medicine). His H-index using Google Scholar MyCitations is 110, with 47.314 citations. In AD ranking for scientist in 2023 is within the top 2% Scientist in Italy and in the World.

### **Participation to courses, meetings and seminars**

Prof. Salvarani has been invited several times as a speaker to the meetings of Società Italiana di Reumatologia (SIR), American College of Rheumatology (ACR) and European League Against Rheumatism (EULAR). He also has been invited as a speaker to several courses or seminars organized by the same societies. He is the main author/co-author of more than 1,000 abstracts accepted at the annual meetings of SIR, ACR, and EULAR.

Reggio Emilia, 4/1/2024

Carlo Salvarani

*Carlo Salvarani*