UNIVERSITÀ POLITECNICA DELLE MARCHE

Supervisor: Prof. Michele M. Luchetti Gentiloni

Dept. of Clinical and Molecular Sciences

Project idea: Validation of serum biomarkers predictive of the transition from psoriasis to psoriatic arthritis

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Research Group Description: the Supervisor

Prof. Prof. Michele M. Luchetti Gentiloni, MD, PhD.

Michele M. Luchetti Gentiloni is **Associate Professor of Internal Medicine** (SDS MED/09), in the Sciences and Molecular department at UNIVPM and **MD, Clinica Medica Unit** at Marche University Hospital, Ancona, Italy.

Head of the Spondyloarthritis Clinic of the Clinica Medica and IBD UNIT at the Marche University Hospital, Ancona, Italy.

Tutor of the Clinical and Research Activity of a team more than 9 residents in Internal Medicine per year, focused on the topic of spondyloarthritis.

Author of more than 95 publications on immuno-mediated diseases, especially psoriatic arthritis and spondyloarthritis.

https://orcid.org/0000-0001-9132-7401

Memberships/Mentorship in International Organizations:

- **GRAPPA** (Group for Research and Assessment of Psoriasis and Psoriatic Arthritis);
- **ASAS** (Assessment of Spondyloarthritis International Society)
- **Mentor of the GRAPPA Mentorship Pilot Program 2026-27**

Grants

- 2000. Grant from the Telethon Organizationa, Italy. Telethon Project n. 0822: “Ruolo dei protooncogeni c-myb e B-myb nella regolazione dei geni del collageno”
- 2002. Genethon project n. 0182, 5-7-2002 : “Tissue-targeted anti-fibrotic gene-therapy using antisense c-myb gene driven by the promoter of the human type I collagen gene”. GENETHON, Francia.
- 2005. PRIN (Scientific research programs of significant national interest). PI of the Research Unit. Project: Development of an RNA-interference model, using plasmids and aav-2 viral vectors, for the study of the molecular mechanisms and gene therapy of fibrosis
- 2005. “The cytokine pattern at the onset of rheumatoid arthritis and cytokine modifications induced by the therapy with Etanercept”, EudraCT number 2005-003218-13.
- 2006.Research Grant. “To determine the basis for reduced fibrosis and improved scar formation in c-myb heterozygous skin”. Children Research Foundation (Australia), In collaboration with Allison Cowin, Dept. Tissue Development and Repair, Child Health Research Institute, 72 King William Road, North Adelaide, Australia.
- 2014-17. Grant of the Swiss Health National System. The role of the diet in the development of neoplastic diseases. In collaboration with Prof. Roberto Coppari, Dip. di Anatomia, Geneve Medicine University, Swiss.
- 2020-24. IIS Grant from AbbVie, Chicago, USA. Evaluation of sclerostin and anti-sclerostin serum levels, gut epithelial impairment and microbial translocation in patients with psoriatic arthritis with or without axial involvement.

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Department of Clinical and Molecular Sciences (DISCLIMO)

SUN RISE

EXCELLENCE IN RESEARCH

MARCHEBIOBANK

16 SCIENTIFIC AREAS

BIO/17, MED/02, MED/04, MED/05, MED/06, MED/09, MED/12, MED/13, MED/15, MED/16, MED/31, MED/33, MED/35, MED/44, MED/46, MED/50

65 ACADEMICS

21 TECHNICIANS

UNDERGRADUATES

Students of medicine and environmental and workplace prevention techniques

POSTGRADUATE MEDICAL EDUCATION

Allergology and Clinical Immunology; Clinical Pathology and Clinical Biochemistry; Dermatology and Venereology; Emergency Medicine; Endocrinology and Metabolic Diseases; Food Science; Geriatrics; Diseases of the digestive system; Haematology; Internal Medicine; Medical Oncology; Occupational Medicine; Orthopedics and Traumatology; Rheumatology.

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RESEARCH LABORATORIES

- 23 PhD STUDENTS
- 7 POST DOC
- POST-GRADUATE STUDENTS (14 COURSES)

10

CLINICAL RESEARCH UNITS

> 500

Publications (2024-2025)

> 5 Mil EUR

RESEARCH INCOME

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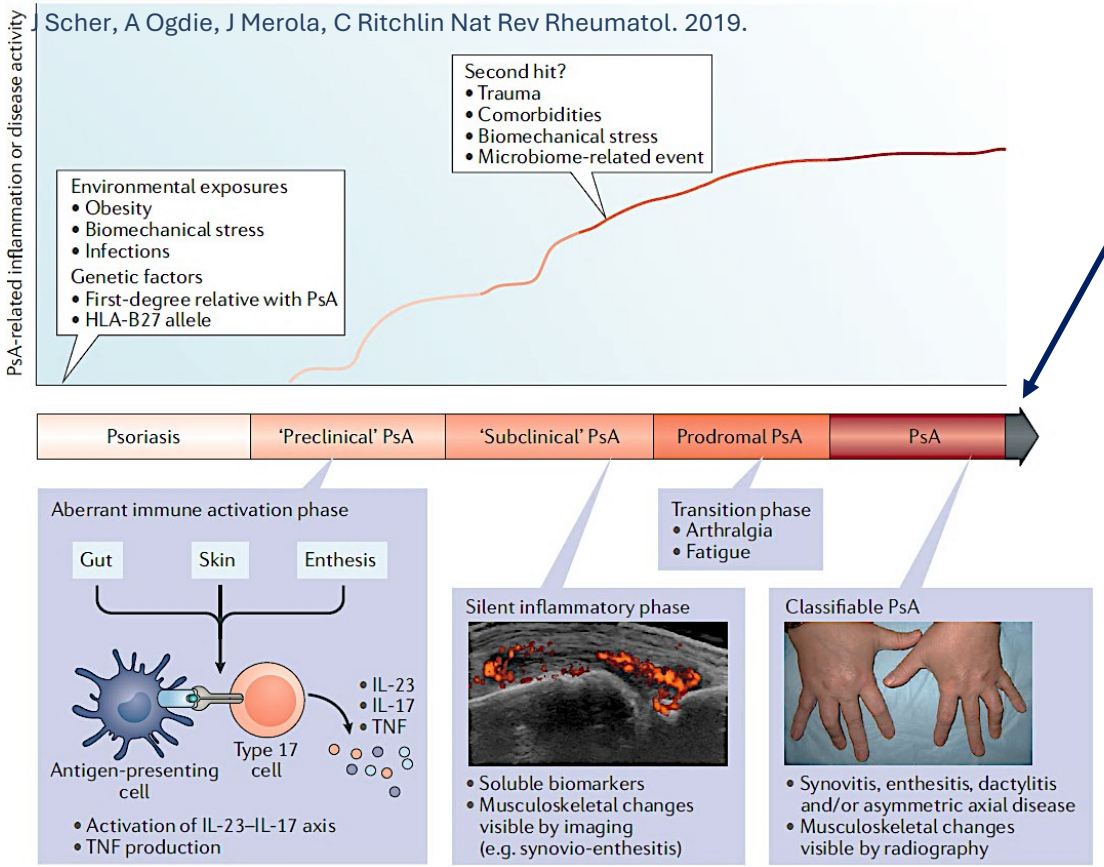
Research Description:

BACKGROUND: The Transition From Pso To Psa



In this model, 4 clinically stages have been proposed for the transition from psoriasis (Pso) to overt psoriatica arthritis (PsA):

1. The **preclinical** phase: characterized by aberrant activation of the immune system (particularly involving activation of the IL-23/IL-17 axis and TNF production) by inciting features derived from cutaneous tissue, intestinal mucosa (that is, the microbiome) and/or the entheses.
2. The **subclinical** phase, where soluble biomarkers and distinct musculoskeletal changes are evident through imaging platforms (such as musculoskeletal ultrasonography and MRI).
3. **The prodromal PsA:** somewhat short period of arthralgia and fatigue defines the transitional phase that occurs before progression to
4. **clinically evident PsA**.

Considering that the preclinical phase of the transition from Pso is clinically challenging in routine practice, it should be considered a model of patient care, integrating laboratory data with clinical assessment and finally ultrasound Doppler (USD) examination. Therefore, the main objectives of this research will be:

a) How can we identify patients with preclinical PsA?
b) Are there any valuable biomarkers to use in preclinical PsA to assist the clinician in deciding further secondary level evaluations?

a) Patients with preclinical PsA may experience arthralgias over many years, with or without developing arthritis [1].
b) So far, despite numerous efforts using molecular techniques, no useful biomarkers, except the C-reactive protein (CRP), have been identified to predict which Pso patients might develop, or not develop, arthritis [2].

1. Alen Zabotti, Filippo Fagni, Laure Gossec et al. 2024;10:e004314. 2. Eder L, Lix, Chandran V et al. Arthr Care Res 2025; 1288-92.

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Research Description:

Validation of biomarkers predictive of Pso to PsA transition

MAIN OBJECTIVES:

a. Finding serum biomarkers predicting the transition from Pso to PsA
b. Validation of the biomarkers by comparing plasma levels with clinical activity
c. Correlation of the biomarkers with USD assessment

Pso patients with arthralgias [1]

Rheumatologic Assessment

Serum Collection — Stock in the MARCHE Biobank[2]

USD Evaluation

Clinical Evaluation

Pso Patients w/o arthritis

Patients with PsA

Biomarkers Analysis:

- CRP
- I-FABP
- LBP
- sCD14

Comparison of biomarkers plasma levels with

- Final diagnosis
- clinical activity
- USD assessment

Follow up at 12 and 24 months

1. Alen Zabotti, Filippo Fagni, Laure Gossec et al. 2024;10:e004314. 2. https://www.marchebiobank.it