



Universiteit
Leiden

The Netherlands

Differences and similarities of autoantibody-positive and autoantibody-negative rheumatoid arthritis during the disease course: on our way to personalized medicine

Matthijssen, X.M.E.

Citation

Matthijssen, X. M. E. (2022, June 21). *Differences and similarities of autoantibody-positive and autoantibody-negative rheumatoid arthritis during the disease course: on our way to personalized medicine*. Retrieved from <https://hdl.handle.net/1887/3421332>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3421332>

Note: To cite this publication please use the final published version (if applicable).

Differences and similarities of autoantibody-
positive and autoantibody-negative rheumatoid
arthritis during the disease course:
on our way to personalized medicine

Xanthe Matthijssen

Differences and similarities of autoantibody-positive and autoantibody-negative rheumatoid arthritis during the disease course: on our way to personalized medicine

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van de rector magnificus prof. dr. ir. H. Bijl
volgens besluit van het college voor promoties
te verdedigen op dinsdag 21 juni
klokke 15:00 uur
door

The studies described in this thesis were performed at the Department of Rheumatology at the Leiden University Medical Centre, Leiden, the Netherlands.

ISBN/EAN: 978-94-6419-510-1

The printing of this thesis was financially supported by the Leiden University Library.

Cover design: J.A. Kamp and X.M.E. Matthijssen

Thesis layout: Ilse Modder, www.ilsemmodder.nl

Printing: Gildeprint, Enschede, the Netherlands

Xanthe Marijn Edmée Matthijssen
geboren te Rotterdam in 1992



Copyright © by X.M.E. Matthijssen

All rights reserved. No parts of this book may be reproduced, stored in a retrieval system or transmitted in any form or by any means, without permission of the author.

Promotores

prof. dr. A.H.M. van der Helm - van Mil

prof. dr. T.W.J. Huizinga

Leden promotiecommissie

prof. dr. D.M.F.M. van der Heijde

prof. dr. S. le Cessie

prof. dr. R.F. van Vollenhoven (Universiteit van Amsterdam)

dr. P.H.P. de Jong (Erasmus Universiteit Rotterdam)

CONTENTS

Chapter 1:	Introduction	9
PRE-ARTHRITIS		25
Chapter 2:	A search to the target tissue in which RA-specific inflammation starts: a detailed MRI study to improve identification of RA-specific features in the phase of clinically suspect arthralgia	27
EARLY ARTHRITIS		47
Chapter 3:	Tenosynovitis has a high sensitivity for early ACPA-positive and ACPA-negative RA: a large cross-sectional MRI study	49
Chapter 4:	The increasing incidence of autoantibody negative RA is replicated and is partly explained by an aging population	67
Chapter 5:	The value of imaging detected joint inflammation in explaining fatigue in rheumatoid arthritis at diagnosis and during the disease course – a large MRI study	73
Chapter 6:	Differing time orders of inflammation decrease between ACPA-subsets in RA-patients suggest differences in underlying inflammatory pathways	91
LONG-TERM OUTCOMES		107
Chapter 7:	Enhanced treatment strategies and distinct disease outcomes among autoantibody-positive and -negative rheumatoid arthritis patients over 25 years: a longitudinal cohort study in the Netherlands	109
Chapter 8:	Early intensive treatment normalizes excess mortality in ACPA-negative RA but not in ACPA-positive RA	135
Chapter 9:	Summary and discussion	141
Chapter 10:	Nederlandse samenvatting	160
	Curriculum Vitae	166
	List of publications	168
	Dankwoord	172