

University of Groningen

Disease-activity in ANCA-associated vasculitis

Sanders, Johannes Stephanus Franciscus

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2009

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Sanders, J. S. F. (2009). *Disease-activity in ANCA-associated vasculitis*. [Thesis fully internal (DIV), University of Groningen]. [s.n.].

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Disease activity in ANCA-associated vasculitis

J.S.F. Sanders

Sanders, J.S.F.

Disease activity in ANCA-associated vasculitis

Proefschrift Groningen. Met literatuur opgave. Met samenvatting in het Nederlands.

ISBN: 978-90-367-3993-1

© 2009 J.S.F. Sanders

All rights are reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form of by any means, mechanically, by photocopying, recording, or otherwise, without the written permission of the author.

Financial support for this thesis was granted by the Dutch Arthritis Foundation, Dutch Kidney Foundation, and ZonMW

For the publication of this thesis, financial sponsoring of the following institutions and companies is gratefully acknowledged:

Abbott BV, Baxter BV, Boehringer Ingelheim BV, Dutch Kidney Foundation, Fresenius BV, Friedrich Wegener Stichting, Gambro Hospal BV, GUIDE, Phadia BV, Pfizer BV, Rijksuniversiteit Groningen, Roche BV, Servier Farma BV, Schering-Plough BV, Shire BV, and ZonMW

Cover design and layout: Legatron Electronic Publishing, Rotterdam

Printed by: Ipskamp Drukkers, Enschede

RIJKSUNIVERSITEIT GRONINGEN

Disease activity in ANCA-associated vasculitis

Proefschrift

ter verkrijging van het doctoraat in de
Medische Wetenschappen
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
woensdag 4 november 2009
om 16.15 uur

door

Johannes Stephanus Franciscus Sanders

geboren op 23 juni 1977
te Hengelo (O)

Promotor: Prof. dr. C.G.M. Kallenberg

Copromotor: Dr. C.A. Stegeman

Beoordelingscommissie: Prof. dr. J.W. Cohen Tervaert
Prof. dr. M. Daha
Prof. dr. P.E. de Jong

Paranimfen
Drs. D.B. Rouw
Drs. M.P.Th. Sanders

Voor mijn ouders

CONTENTS

Chapter 1	Introduction to the thesis	9
Chapter 2	Risk factors for relapse in anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis: Tools for treatment decisions?	17
Chapter 3	Prediction of relapses in PR3-ANCA-associated vasculitis by assessing responses of ANCA titers to treatment	35
Chapter 4	Plasma levels of soluble IL-2R, soluble CD30, IL-10 and BAFF during follow-up in PR3-ANCA-associated vasculitis: associations with disease activity and relapse	49
Chapter 5	Maintenance therapy for vasculitis associated with antineutrophil cytoplasmic antibodies	65
Chapter 6	Patient outcome on maintenance therapy with azathioprine as compared to cyclophosphamide in ANCA-associated vasculitis: long-term single center experience	69
Chapter 7	Renal Expression of Matrix Metalloproteinases in Human ANCA-associated Glomerulonephritis	87
Chapter 8	Urinary matrix metalloproteinases reflect renal damage in anti-neutrophil cytoplasm autoantibody-associated vasculitis	103
Chapter 9	Summary and discussion	123
	Samenvatting	137
	Dankwoord	143

