



Universiteit
Leiden
The Netherlands

Prediction of long-term complications of venous thromboembolism

Ende-Verhaar, Y.M.

Citation

Ende-Verhaar, Y. M. (2019, November 7). *Prediction of long-term complications of venous thromboembolism*. Retrieved from <https://hdl.handle.net/1887/80156>

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/1887/80156>

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

Cover Page



Universiteit Leiden



The following handle holds various files of this Leiden University dissertation:
<http://hdl.handle.net/1887/80156>

Author: Ende-Verhaar, Y.M.

Title: Prediction of long-term complications of venous thromboembolism

Issue Date: 2019-11-07

Prediction of long-term complications of venous thromboembolism

Yvonne M. Ende-Verhaar

The studies described in this thesis were performed at the Department of Thrombosis and Hemostasis of the Leiden University Medical Center, Leiden, the Netherlands

Copyright © Y.M. Ende-Verhaar, 2019

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

ISBN: 978-94-6361-301-9

Layout and printing: optima Grafische Communicatie, Rotterdam, the Netherlands

Prediction of long-term complications of venous thromboembolism

Proefschrift

Ter verkrijging van de graad van Doctor aan de Universiteit Leiden,
op gezag van de Rector Magnificus prof. mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties te verdedigen op

donderdag 7 november 2019
klokke 16:15 uur

door

Yvonne M. Ende-Verhaar

geboren te Uithoorn
in 1983

Promotor

Prof. dr. M.V. Huisman

Co-promotor

Dr. F.A. Klok

Leden promotiecommissie

Prof. dr. H.C.J. Eikenboom

Dr. M.K. Ninaber

Prof. dr. M. Delcroix (UZ, Leuven)

Prof. dr. A. Vonk-Noordegraaf (Amsterdam UMC, locatie VUmc)

Financial support by the Dutch Heart Foundation for the publication of this thesis is gratefully acknowledged. Additional financial support was kindly provided by LEO Pharma, Federatie van Nederlandse Trombosediensten, STAGO B.V., Chipsoft.

CONTENTS

| | | |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Chapter 1 | Introduction | 7 |
| Chapter 2 | To screen or not to screen for chronic thromboembolic pulmonary hypertension after acute pulmonary embolism | 15 |
| Chapter 3 | Incidence of chronic thromboembolic pulmonary hypertension after acute pulmonary embolism, a contemporary view on the published literature | 35 |
| Chapter 4 | Sensitivity of a simple non-invasive screening algorithm for chronic thromboembolic pulmonary hypertension after acute pulmonary embolism | 61 |
| Chapter 5 | Accuracy and reproducibility of CT right-to-left ventricular diameter measurement in patients with acute pulmonary embolism | 75 |
| Chapter 6 | Usefulness of standard computed tomography pulmonary angiography performed for acute pulmonary embolism for identification of chronic thromboembolic pulmonary hypertension: results of the InShape III study | 89 |
| Chapter 7 | Healthcare utilization in chronic thromboembolic pulmonary hypertension after acute pulmonary embolism | 107 |
| Chapter 8 | Post-thrombotic syndrome: short and long-term incidence and risk factors | 123 |
| Chapter 9 | General discussion and summary | 149 |
| Chapter 10 | Nederlandse samenvatting | 157 |
| | List of publications | 169 |
| | Dankwoord | 171 |
| | Curriculum vitae | 173 |

