



Universiteit
Leiden

The Netherlands

Gene therapy and cement injection for the treatment of hip prosthesis loosening in elderly patients

Poorter, J. de

Citation

Poorter, J. de. (2010, January 28). *Gene therapy and cement injection for the treatment of hip prosthesis loosening in elderly patients*. Retrieved from <https://hdl.handle.net/1887/14642>

Version: Corrected 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/1887/14642>

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

Gene therapy and cement injection for the treatment of hip prosthesis loosening in elderly patients

Jolanda de Poorter

**Gene therapy and cement injection for the treatment of hip prosthesis loosening
in elderly patients**

Jolanda Johanna de Poorter

PhD Thesis, Leiden University Medical Center, Leiden, The Netherlands

© 2009 J.J. de Poorter, Voorhout

ISBN/EAN: 978-90-9024975-9

Lay-out: Grafisch bureau Christine van der Ven, Voorschoten

Cover photographs: Gerrit Kracht

Printed by: Buijten en Schipperheijn, Amsterdam

Publication of this thesis was financially supported by de Nederlandse Orthopaedische Vereniging, Stichting Anna Fonds, Link Nederland, Implantcast Benelux en Bauerfeind benelux BV.

Gene therapy and cement injection for the treatment of hip prosthesis loosening in elderly patients

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 28 januari 2010
klokke 16.15 uur

door
Jolanda de Poorter
geboren te Eindhoven in 1976

PROMOTIECOMMISSIE

Promotores: Prof. dr. R.G.H.H. Nelissen
Prof. dr. T.W.J. Huizinga

Overige leden: Prof. dr. S.K. Bulstra (Universitair Medisch Centrum Groningen)
Prof. dr. R.C. Hoeben
Prof. dr. L.W. van Rhijn (Maastricht Universitair Medisch Centrum)
Dr. R.E.M. Toes
Prof. dr. D. Valerio
Dr. ir. E.R. Valstar

Contents

| | | |
|-----------|--|-----|
| Chapter 1 | General introduction | 7 |
| Chapter 2 | Revision Hip Arthroplasty in patients over 80 years of age. Implications on social life and activities in daily living | 17 |
| Chapter 3 | Towards gene therapy in prosthesis loosening: Efficient killing of interface cells by Gene-Directed Enzyme Prodrug Therapy with nitroreductase and the prodrug CB1954..... <i>Journal of Gene Medicine, 2005; 7: 1421-8</i> | 35 |
| Chapter 4 | Optimisation of short-term transgene expression by sodium butyrate and Ubiquitous Chromatin Opening Elements (UCOE)s..... <i>Journal of Gene Medicine, 2007; 9: 639-48</i> | 51 |
| Chapter 5 | Arthrography in loosened hip prostheses. Assessment of possibilities for intra-articular therapy | 67 |
| | <i>Joint Bone Spine, 2006; 73: 684-90</i> | |
| Chapter 6 | Clinical protocol Gene Therapy in aseptic prosthetic replacement loosening. A phase 1 study..... | 81 |
| Chapter 7 | Gene Therapy for the treatment of Hip Prosthesis Loosening: Adverse Events in a Phase 1 Clinical Study | 125 |
| | <i>Human Gene Therapy, 2008; 19: 1029-38</i> | |
| Chapter 8 | Gene therapy and cement injection for restabilisation of loosened hip prostheses..... | 139 |
| | <i>Human Gene Therapy, 2008; 19: 83-95</i> | |
| Chapter 9 | Percutaneous periprosthetic cement injection as an alternative treatment for aseptic hip prosthesis loosening in elderly patients with significant comorbidity. A report of seven cases. | 159 |

| | |
|--|-----|
| Chapter 10 Summary and discussion | 171 |
| Chapter 11 Samenvatting en discussie | 181 |
| Reference List | 191 |
| List of publications | 201 |
| Curriculum vitae | 205 |