Preface

Quantitative musculoskeletal imaging biomarkers

"Meten is weten…" ("To measure is to know…")—Dutch saying

In recent decades the importance of quantitative imaging biomarkers has been increasingly recognized, both in research and clinical settings, motivated to a large extent by a growing understanding of the molecular basis of diseases and a need for precision medicine. Given the occurrence of many common, yet debilitating conditions in the musculoskeletal system, quantitative musculoskeletal imaging constitutes a topic of very active research in many parts of the world.

This special issue of *Quantitative Imaging in Medicine and Surgery* (*QIMS*) highlights current topics in the field of quantitative musculoskeletal imaging, both from a scientific and clinical perspective, contributed by world-renowned experts. I believe the authors have succeeded in covering a wide range of quantitative morphometric and compositional methods acquired with a balanced mix of established and novel imaging modalities such as radiography, ultrasound, CT, MR imaging and PET/MR, applied to various musculoskeletal diseases affecting tissues such as bone, cartilage, tendon, muscle and meniscus. New developments in image analysis that may identify additional quantitative biomarkers are also featured.

Along with the increased research efforts in the field, recommendations have recently been formulated for the evaluation of quantitative imaging biomarkers (1). Furthermore, the development of imaging biomarkers is nowadays considered a structured process in which new biomarkers are discovered, verified, validated and qualified against biological processes and clinical end-points (2). The quantitative musculoskeletal imaging biomarkers discussed in this issue are at varying stages of this process, but several methods will undoubtedly progress rapidly in the coming years.

I would like to extend my sincere gratitude to all authors who devoted their time, effort and expertise in putting together excellent contributions to this work. I also thank the Editorial Board of *QIMS* for the opportunity to serve as the guest editor for this issue. I hope that this issue will be informative for the reader and may serve as an up-to-date source of inspiration for imaging researchers and clinical radiologists alike to further advance the development and application of quantitative imaging biomarkers in musculoskeletal diseases.

Dr. Edwin H. G. Oei, Guest Editor

Author's introduction: Guest Editor Dr. Edwin H. G. Oei. Dr. Oei is a musculoskeletal radiologist, assistant professor and section chief of musculoskeletal 24 radiology at Erasmus MC, University Medical Center, Rotterdam, The Netherlands. He leads an active research line in quantitative imaging of common musculoskeletal disorders including osteoarthritis, sports injuries and osteoporosis.

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