Doctoral thesis presented March 4, 2016 by Catharina Göthberg:

On loading protocols and abutment use in implant dentistry. Clinical studies.

Catharina Göthberg successfully defended her PhD thesis on the 4th of March, 2016. The faculty opponent was Professor Jan Eirik Ellingsen, Institute of Odontology, University of Oslo. Supervisors were Dr Omar Omar and Professor Peter Thomsen.

The treatment with dental implants is an established method for replacing lost teeth. However, the time needed to establish osseointegration before loading with artificial teeth can be fitted is not known. Further, the role and importance of the mucosa-penetrating abutment for bone and soft tissue changes is not understood. The thesis is based on a 5-year randomized, controlled clinical trial and various aspects of implant treatment. The research also highlights the long-term biological and technical complications.

The results demonstrated similar implant survival and marginal bone loss, irrespective of loading protocol. The use of a machined abutment should be preferred regarding marginal bone stability over time. Further, no scientific support for placing superstructures directly on the implant is provided. Factors related to systemic health and medication as well as periodontal disease experience and smoking, are associated with marginal bone loss. Few technical complications occured during the study. Peri-implantitis was found in 9.1% of the patients, indicating the need for supportive maintenance. An explorative paper in the thesis showed the possibility to retrieve small amounts of crevicular fluid for RNA extraction and gene expression. This approach is currently pursued in clinical follow-up studies.

Catharina Göthberg works clinically at the Department of Prosthetic Dentistry, Institute for Postgraduate Dental Education, Jönköping, Sweden. At the department, patients come for treatment and consultation from private dental care or public dental services. They also conduct various types of training including training of specialists in oral prosthetics. The research was performed in collaboration with the Department of Biomaterials and the BIOMATCELL VINN Excellence Center of Biomaterials and Cell Therapy, University of Gothenburg.