

Roxolid: A milestone in implant dentistry

Ashutosh Gupta

To the Editors,

Roxolid (Straumann, Switzerland) is a high performance implant biomaterial that offers higher strength than cpTi (commercially pure titanium). It is a homogenous titanium and zirconium alloy containing about 13–18% zirconium. According to Straumann

“The combination of enhanced strength and osseointegration could open the door for a new generation of smaller, safer implants, which would be particularly advantageous in situations where there is limited space between teeth. A further potential advantage could be the use in thin bone (narrow bone ridge), where wider implants would necessitate bone augmentation/grafting procedures.”

Roxolid is thus a new material for dental implants.

Preclinical study results presented at 23rd annual meeting of Academy of Osseointegration (AO), Boston, February 2008 and at the 17th Annual scientific meeting of the European Association for osseointegration, Warsaw, showed that Roxolid integrated with bone better than pure titanium [1–3]. Analysis of the fatigue behavior indicated that the endurance level of Roxolid implants was 13–42% higher compared to titanium implants with the same length, diameter and surface treatment. The ultimate tensile strength of Roxolid is significantly higher than titanium [4]. Thus a narrow diameter implant is possible with enhanced property compared to pure titanium. A recent study by barter et al. [5] showed that

the mean change in the functional bone level two years after loading Roxolid implant was -0.33 ± 0.54 mm with pocket depth ranging from 2.21–2.89 mm. Thus the new implant was safe and reliable.

Although Roxolid provides more treatment options with small diameter and shorter implants, but force distribution to the surrounding bone with smaller implant is still unclear. Also literature is lacking regarding the strength of implant at abutment- fixture interface; the most fragile part of implant. A recent report by Karl et al. [6] showed Roxolid implant fracture just apical to the abutment screw, when implant was placed at maxillary canine area to support a removable partial denture. Hence an exhaustive research is warranted before considering it as a breakthrough in implant dentistry.

Keywords: Implant biomaterial, Osseointegration, SLActive, Roxolid

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Ashutosh Gupta – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Guarantor

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Conflict of Interest

Authors declare no conflict of interest.

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