

Lia Rimondini

Nata a Bologna, residente a Bologna
Professore associato confermato
MED/28 Malattie odontostomatologiche

Facoltà di Medicina e Chirurgia
Dipartimento di Scienze Mediche
Tel.: 0321 660673 Fax: 0321 620 421
E-mail: lia.rimondini@med.unipmn.it

CARRIERA ACCADEMICA: 2005-2009: Professore associato

INSEGNAMENTI. 2005: Protesi e odontoiatria restaurativa.

CURRICULUM. Attualmente è Professore Associato nel settore scientifico disciplinare Med/28 presso l'Università del Piemonte Orientale "Amedeo Avogadro", sede di Novara.

In precedenza è stata Professore a contratto presso le Università di Bologna, Milano e dell'Insubria. Ha ricoperto incarichi di direzione di ricerca di unità Operative finanziate dal CNR per lo sviluppo di materiali speciali per tecnologie avanzate. È inoltre autore di brevetti relativi ai dispositivi medici.

CAMPI DI INDAGINE NELLA RICERCA. Materiali Dentari; Biomateriali; Rigenerazione tissutale, Parodontologia; Implantologia; Odontoiatria Restaurativa.

TEMI CORRENTI DI RICERCA.

Sostituti dell'osso – Materiali alloplastici osteoconduttivi. An assessment was done of the bone-healing rate after implantation of a polylactide/polyglycolide copolymer (PLA-PGA) 50/50 dispersed in aqueous solution of PGA and dextran, used as bone substitutes in an animal model. STUDY DESIGN: Two groups of 5 rabbits each were used. In both the femoral condyles, a critical size defect of 6x10 mm was made. On the right side PLA/PGA was inserted; the left side remained empty. Thirty and 90 days after surgery the animals were killed. RESULTS: Defects left unfilled showed no spontaneous healing after 30 and 90 days. Sites filled with experimental materials showed new bone ranging between 11.46% and 76.82% after 30 days, and 75.98% and 95.34% after 90 days. Histomorphometry showed an increase in bone maturation between day 30 and 90 in experimental sites. At day 90, no statistical difference was seen as compared to normal bone. CONCLUSION: PLA/PGA copolymer dispersed in hydrosoluble matrix seems to be suitable as osteoconductive material in critical size defects.

Modifiche superficiali degli impianti dentali e citofunzionalità'. The aim of this study was to characterize and compare various titanium (Ti) and hydroxyapatite (HA) coatings on Ti6Al4V, in view of their application on noncemented orthopedic implants. Two innovative vacuum plasma sprayed (VPS) coatings, the first of ultrahigh rough and dense Ti (PG60, R(a) = 74 μm) and the second of ultrahigh rough and dense Ti coated with HA (HPG60, R(a) = 52 μm), have been developed, and the response of osteoblast-like cells (MG-63) seeded on these new coatings was evaluated in comparison to: a low roughness and sandblasted (Ti/SA, R(a) = 4 μm) Ti6Al4V surface; Ti medium (TI01, R(a) = 18 μm), and high (TI60, R(a) = 40 μm) roughness VPS coatings; and the relative Ti plus HA duplex coatings (HT01, R(a) = 12 μm and HT60, R(a) = 36 μm respectively), also obtained by VPS. PG60 coating presented no open porosity, making it dense and potentially intrinsically stronger. Cell adhesion and proliferation on PG60 was similar to those of the smoothest one (Ti/SA) and adhesion on ultrahigh roughness was lower than the medium- and high-roughness coatings, whereas cell proliferation on PG60 was lower than TI60. The HA coating determined significant increases in cell proliferation at medium and high roughness levels when compared to the relative Ti coating, but not compared to the ultrahigh one; all HA-coated surfaces showed a decrease in alkaline phosphatase activity and collagen I production. Surface morphology and the HA coating strongly affected cell behavior. However, ultrahigh values of roughness are not correctly seen by cells, and the presence of HA has no improving effects.

Modalità di guarigione attorno agli impianti dentali. A pilot in vivo study was conducted to evaluate (1) the rate of osseointegration at apical, middle, and coronal levels of oral implants immediately installed into fresh extraction sockets; (2) the maturation of the newly formed bone surrounding implants during 60 days of healing; and (3) the epithelium seal development. STUDY DESIGN: The premolars of 8 male adult mini-pigs were extracted at each mandibular site under general anesthesia. In the experimental side, Frialit-2 implants were immediately inserted. The gap between bone and implants ranged between 3 and 6 mm circumferentially. Bone specimens were obtained at 7, 15, 30, and 60 days after surgery for histologic and histomorphometric studies. Bone-to-implant contact (BIC), bone volume, trabecular thickness, number, and separation were recorded. Nonparametric exact tests were used to evaluate data. RESULTS: BIC at the coronal level was observed close to 0% at day 7 and increased up to 60% at day 60 after surgery on an average. BIC increased from 11.7% to 47.38% at middle level and from 53.4% to 67.38% at apical level from day 7 to day 60. With respect to bone maturation, in the earlier stages of healing, many thin trabeculae were observed, which, particularly at coronal level, became significantly fewer and thicker in more advanced stages. At day 60, the features of the bone were similar to those of baseline. The epithelium never migrated more than 1.8 mm apically to the top of the alveolar bone level. CONCLUSION: When implants are placed immediately into fresh extraction sockets, in minipig models osseointegration also occurs without initial bone contact.

Ricerca Clinica – Comparazione Tra Diverse Tecniche Di Rigenerazione Tissutale. The purpose of this prospective study was to compare vertical guided bone regeneration (GBR) and vertical distraction osteogenesis (DO) for their ability in correcting vertically deficient alveolar ridges and their ability in maintaining over time the vertical bone gain obtained before and after implant placement. Eleven patients (group 1) were treated by means of vertical GBR with autogenous bone and e-PTFE membranes, while 10 patients (group 2) were treated by means of DO. In group 1, six patients received implants at the time of GBR (subgroup 1A), while five patients had implants placed at the time of membrane removal (subgroup 1B). In group 2, implants were placed at the time of distraction device removal. A total of 25 implants were placed in group 1 and 34 implants were placed in group 2 patients. Three to 5 months after implant placement, patients were rehabilitated with implant-borne dental prostheses. The following

parameters were evaluated: (a) bone resorption of the regenerated ridges before and after implant placement; (b) peri-implant clinical parameters 1, 2, and 3 years after prosthetic loading of implants; (c) survival and success rates of implants. Bone resorption values before and after implant placement were significantly higher in group 1. The results suggested that both techniques may improve the deficit of vertically resorbed edentulous ridges, although distraction osteogenesis seems to be more predictable as far as the long-term prognosis of vertical bone gain is concerned. Implant survival rates as well as peri-implant clinical parameters do not differ significantly between the two groups, whereas the success rate of implants placed in group 2 patients was higher than that obtained in group 1 patients.

PUBBLICAZIONI PIÙ RECENTI.

L. RIMONDINI, G. B. BRUSCHI, A. SCIPIONI, A. CARRASSI, N. NICOLI-ALDINI, G. GIAVARESI, M. FINI, C. MORTELLARO, R. GIARDINO, Tissue Healing in Implants Immediately Placed into Postextraction Sockets: a Pilot Study in a Mini-pig Model, in "Oral Surg Oral Med Oral Pathol Oral Radiol Endod." 100:3 (2005), pp. 43-50

V. BORSARI, G. GIAVARESI, M. FINI, P. TORRICELLI, A. SALITO, R. CHIESA, L. CHIUSOLI, A. VOLPERT, L. RIMONDINI, R. GIARDINO, Physical Characterization of Different-roughness Titanium Surfaces, with and without Hydroxyapatite Coating, and Their Effect on Human Osteoblast-like Cells, in "J Biomed Mater Res B Appl Biomater." 75B:2 (2005), pp. 359-368

L. RIMONDINI, N. NICOLI-ALDINI, M. FINI, G. GUZZARDELLA, M. TSCHON, R. GIARDINO, In Vivo Experimental Study on Bone Regeneration in Critical Bone Defects Using an Injectable Biodegradable PLA/PGA Copolymer, in "Oral Surg Oral Med Oral Pathol Oral Radiol Endod." 99:2 (2005), pp. 148-154

G. RONDELLI, P. TORRICELLI, M. FINI, L. RIMONDINI, R. GIARDINO, In vitro corrosion study by EIS of an equiatomic NiTi alloy and an implant quality AISI 316 stainless steel. in "J Biomed Mater Res B Appl Biomater" 79:2 (2006) PP.320-4

L. GIARDINO, E. AMBU, C. BECCE, L. RIMONDINI, M. MORRA, Surface tension comparison of four common root canal irrigants and two new irrigants containing antibiotic, in "J Endod" 32: 11 (2006) pp. 1091-3.

V. BORSARI, M. FINI, G. GIAVARESI, L. RIMONDINI, R. CHIESA, L. CHIUSOLI, R. GIARDINO, Sandblasted titanium osteointegration in young, aged and ovariectomized sheep in "Int J Artif Organs" 30.2 (2007):163-72

M. CHIAPASCO, M. ZANIBONI, L. RIMONDINI, Autogenous onlay bone grafts vs. alveolar distraction osteogenesis for the correction of vertically deficient edentulous ridges: a 2-4-year prospective study on humans, in: "Clin Oral Implants Res" 18.4 (2007) pp.432-40.

Orario di Ricevimento

(Mercoledì ore 12-13 – Via Solaroli 17 –
previo appuntamento per mail)

e-mail: lia.rimondini@med.unipmn.it

Tel 0321 660673