**Systemic conditions and treatments as risks for implant therapy.**

Bornstein MM, Cionca N, Mombelli A.


**Abstract**

PURPOSE: To evaluate whether systemic diseases with/without systemic medication increase the risk of implant failure and therefore diminish success and survival rates of dental implants.

MATERIALS AND METHODS: A MEDLINE search was undertaken to find human studies reporting implant survival in subjects treated with osseointegrated dental implants who were diagnosed with at least one of 12 systemic diseases.

RESULTS: For most conditions, no studies comparing patients with and without the condition in a controlled setting were found. For most systemic diseases there are only case reports or case series demonstrating that implant placement, integration, and function are possible in affected patients. For diabetes, heterogeneity of the material and the method of reporting data precluded a formal meta-analysis. No unequivocal tendency for subjects with diabetes to have higher failure rates emerged. The data from papers reporting on osteoporotic patients were also heterogeneous. The evidence for an association between osteoporosis and implant failure was low. Nevertheless, some reports now tend to focus on the medication used in osteoporotic patients, with oral bisphosphonates considered a potential risk factor for osteonecrosis of the jaws, rather than osteoporosis as a risk factor for implant success and survival on its own.

CONCLUSIONS: The level of evidence indicative of absolute and relative contraindications for implant therapy due to systemic diseases is low. Studies comparing patients with and without the condition in a controlled setting are sparse. Especially for patients with manifest osteoporosis under an oral regime of bisphosphonates, prospective controlled studies are urgently needed.

**Dental endosseous implants in the medically compromised patient.**

Scully C, Hobkirk J, Dios PD.


**Abstract**

The literature contains numerous observations on the significance of systemic disorders as contraindications to dental endosseous implant treatment, but the justification for these statements is often apparently allegorical. Although implants are increasingly used in healthy patients, their appropriateness in medically compromised patients is less equivocal. Perhaps surprisingly, the evidence of their efficacy in these groups of patients is quite sparse. Indeed, there are few if any randomized controlled trials (RCTs) in this field. Furthermore, any health risks from the placement of implants are unclear. We review the current evidence for the risks associated with endosseous implants in a range of systemic disorders. There is clearly a need for prospective systematic trials. The degree of disease-control may be far more important that the nature of the disorder itself, and individualized assessment, including the medical condition, quality of life and life expectancy is indicated. The benefits of implants to many of these patients may outweigh any risks. However, proper informed consent is
**Treatment of a patient with severe osteoporosis and chronic polyarthritis with fixed implant-supported prosthesis: a case report.**

Eder A, Watzek G.


**Abstract**

This article reports the treatment and 5-year follow-up of an 80-year-old female with a history of severe osteoporosis and chronic polyarthritis. Treatment included methotrixate disodium and acemetacin. After the last tooth was removed from the mandible, the patient was successfully treated with a fixed mandibular prosthesis supported by 6 implants placed between the mental foramina. The implants have remained osseointegrated, and peri-implant smears have been negative for bacterial colonization. Radiographic follow-up examination has revealed bone loss that is slightly greater than expected. This article focuses on the placement of implants in a patient receiving medication for chronic polyarthritis and osteoporosis.

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**Patient selection for endosseous dental implants: oral and systemic considerations.**

Sugerman PB, Barber MT.


**Abstract**

This paper reviews the literature and discusses patient selection for endosseous dental implants and the effect of systemic and local pathology on the success rate of dental implants. Endosseous dental implants may be preferable to conventional dentures in patients with compromised supporting bone or mucosa, xerostomia, allergy to denture materials, severe gag reflex, susceptibility to candidiasis, diseases affecting orofacial motor function or in patients who demand optimal bite force, esthetics, and phonetics. Conventional dentures or fixed partial prostheses may be preferable to endosseous dental implants in growing and epileptic patients and patients at risk of oral carcinoma, anaphylaxis, severe hemorrhage, steroid crisis, endocarditis, osteoradionecrosis, myocardial infarction, or peri-implantitis. A systematic approach to dental implant patient selection is outlined and centralized reporting of dental implant outcomes is recommended.

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**Systemic diseases affecting osseointegration therapy.**

Mombelli A, Cionca N.


Erratum in:

**Abstract**

OBJECTIVES: To evaluate the impact of systemic diseases and their treatment on the success of osseointegration therapy.
MATERIAL AND METHODS: A search was made to find human studies including subjects treated with osseointegrated oral implants, with a diagnosis of 11 systemic diseases, and reporting at least implant survival.

RESULTS: For most conditions, no studies comparing patients with and without the condition in a controlled setting were found. The evidence to recommend implant therapy was low and consisted in presentations of some successfully treated cases. With regard to diabetes, three types of reports were found: eight case series of diabetic patients treated with implants, six cross-sectional, longitudinal or retrospective evaluations of groups of subjects treated with implants, including some diabetic patients, and one matched control retrospective chart survey. The heterogeneity of the material and the method of data reporting precluded a formal meta-analysis. No unequivocal tendency for subjects with diabetes to have higher failure rates emerged, but the largest of these studies indicated a significant increase in the relative risk of implant failure with diabetes. The data obtained from 17 papers reporting data from osteoporotic patients were also heterogeneous. The evidence for an association of osteoporosis and implant failure was low.

CONCLUSIONS: The level of evidence indicative of absolute and relative contraindications for implant therapy due to systemic diseases is low. Many conditions have been listed as potentially critical, but studies comparing patients with and without the condition in a controlled setting are sparse.

Impact of local and systemic factors on the incidence of late oral implant loss.

Alsaadi G, Quirynen M, Komárek A, van Steenberghe D.


Department of Periodontology, School of Dentistry, Oral Pathology and Maxillofacial Surgery,

Comment in:

Abstract
BACKGROUND: This retrospective study was set to assess the influence of systemic and local bone and intra-oral factors on the occurrence of implant loss from abutment connection up to 2 years.

MATERIALS AND METHODS: The files of 700 patients, have been collected randomly from the total patient group treated by means of endosseous Brånemark system implants (Nobel Biocare, Gothenburg, Sweden) at the Department of Periodontology of the University Hospital of the Catholic University of Leuven. The end point observation was evaluating the loss of the implants 2 years after abutment installation. The study involved all implants that did not encounter early loss and implants for which it was possible to evaluate its status 2 years after abutment surgery. Thus, data of 412 patients (240 females) provided with 1514 implants were analyzed. For each patient, the medical history was carefully checked. Data collection and analysis were mainly focused on endogenous factors such as hypertension, coagulation problems, osteoporosis, hypo- hyperthyroidism, chemotherapy, diabetes type I or II, Crohn's disease, some local factors [e.g. bone quality and quantity, implant (length, diameter, location), type of edentulism, PTV, radiotherapy], smoking habits, and breach of sterility during surgery.

RESULTS: Radiotherapy, implant (diameter and location), and higher PTV at implant insertion and abutment connection, all affected significantly the implant loss.

CONCLUSION: Implant location in the oral cavity and radiotherapy seem predominant to explain the occurrence of implant loss. On the other hand, smoking and systemic health factors do not seem to be prominent players in the etiology of late implant loss.
Impact of local and systemic factors on the incidence of oral implant failures, up to abutment connection.

Alsaadi G, Quirynen M, Komárek A, van Steenberghe D.


Abstract
AIM: The aim of this retrospective study was to assess the influence of systemic and local bone and intra-oral factors on the occurrence of early implant failures, i.e. up to the abutment connection.

MATERIAL AND METHODS: The surgical records of 2004 consecutive patients from the total patient population who had been treated in the period 1982-2003 (with a total of 6946 Brånemark system implants) at the Department of Periodontology of the Catholic University Leuven were evaluated. For each patient the medical history was carefully checked. Data collection and analysis mainly focused on endogenous factors such as hypertension, coagulation problems, osteoporosis, hypo-hyperthyroidy, chemotherapy, diabetes type I or II, Crohn's disease, some local factors [e.g. bone quality and quantity, implant (length, diameter, location), type of edentulism, Periotest value at implant insertion, radiotherapy], smoking habits and breach of sterility during surgery.

RESULTS: A global failure rate of 3.6% was recorded. Osteoporosis, Crohn's disease, smoking habits, implant (length, diameter and location) and vicinity with the natural dentition were all significantly associated with early implant failures (p<0.05).

CONCLUSION: The indication for the use of oral implants should sometimes be reconsidered when alternative prosthetic treatments are available in the presence of possibly interfering systemic or local factors.

Tesmer M, Wallet S, Koutouzis T, Lundgren T.

A 4-year follow-up of two complete mandibular implant-supported removable prostheses in a patient with severe rheumatoid polyarthritis: case report.

Ella B, Lasserre JF, Blanchard JP, Fricain JC.


Abstract
Rheumatoid polyarthritis is a systemic autoimmune disease characterized by chronic synovitis and bone damage associated with significant functional disability and morbidity. This case report describes a 4-year follow-up of a 56-year-old female receiving polymedication for severe rheumatoid polyarthritis and osteoporosis with a fully edentulous maxilla treated with two osseointegrated implants supporting a removable mandibular prosthesis. No practitioner wanted to use implants to stabilize her mandibular prosthesis because of the health risks involved. This report encourages the dental practitioner to be familiar with the symptoms and oral manifestations of rheumatoid polyarthritis in order to help manage this disease when patients lose all of their teeth.
Case report of multiple implant failure in a patient with ankylosing spondylitis.

Barker D, Nohl FS, Postlethwaite KR, Smith DG.


Abstract

This report details a case of multiple implant failure (so-called 'cluster phenomenon') in a patient with ankylosing spondylitis and considers some factors for implant failure including reduced bone density. It highlights the relationship between ankylosing spondylitis and osteoporosis although no direct link is made between these conditions and the implant failures in this case.

Implant prosthodontic rehabilitation of patients with rheumatic disorders: a case series report.

Weinlander M, Krennmair G, Piehslinger E.

Int J Prosthodont. 2010 Jan-Feb;23(1):22-8

Abstract

PURPOSE:

This retrospective study assessed implant and prosthodontic treatment outcomes of patients suffering from rheumatic disorders such as rheumatoid arthritis (RA) and connective tissue diseases (CTDs).

MATERIALS AND METHODS:

This study included 22 patients (all women) suffering from autoimmune rheumatic disorders such as isolated RA (n = 16), RA with concomitant CTDs (n = 5), or isolated CTDs (n = 1). Overall, 89 implants were placed for rehabilitations such as single-tooth replacement (n = 8), fixed partial dentures (n = 14), complete dentures (n = 5), and overdentures (n = 2), and were evaluated after a mean of 42.6 +/- 25.2 months. The cumulative implant survival and success rates and peri-implant conditions (marginal bone loss, pocket depth, Plaque Index, Gingival Index, Bleeding Index, and Calculus Index) were evaluated with a special focus on RA and CTDs. In addition, incidence and type of prosthodontic maintenance were evaluated.

RESULTS:

A high implant survival rate was noted during follow-up with a cumulative 3-year implant success rate of 96.1%. Patients with RA demonstrated acceptable marginal bone resorption (mean: 2.1 +/- 0.5 mm) and good soft tissue conditions, while CTD patients showed increased bone resorption (mean: 3.1 +/- 0.7 mm). This was especially noted in scleroderma patients, as were major peri-implant soft tissue alterations (Bleeding Index) in patients suffering from Sjogren syndrome.

CONCLUSIONS:
A high implant and prothodontic success rate can be anticipated even for patients suffering from autoimmune rheumatic disorders such as RA and CTDs. A scrupulous maintenance program that includes optimal oral hygiene could assist in ensuring stable long-term results for CTD patients with more vulnerable soft tissue conditions.