Bundesverband der
implantologisch
tätigen Zahnärzte
in Europa

European
Association of
Dental
Implantologists

Consensus Paper

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Immediate restoration and immediate loading of oral implants

26th February 2006

This consensus is based upon the results of the Implants World Congress Consensus Meeting in Barcelona 2002, the Third ITI Consensus Conference in Gstaad 2003 and the Immediate Function Consensus Conference in Hollywood, 2003.

During the last years there has been a growing interest in reduction of treatment time, caused by new developments in implant design and treatment modalities. Parallel to these developments dental science has become engaged in an intensive discussion of immediate restoration and immediate loading, resulting in a growing number of publications on these issues.

1. Definitions

Immediate restoration (non functional immediate loading): delivery of dental prosthesis out of occlusion at the day of surgery or within at most 72 hours after implant placement ("protected occlusion").

Immediate loading: delivery of dental prosthesis in occlusion at the day of surgery or within at most 72 hours after implant placement.

This protocol refers to standard implants as defined by the indicated use (CE – system specific definition).

2. Indications

2.1 Edentulous mandible

2.1.1 Immediate loading of implant-supported overdentures

Immediate loading of at least 4 implants (intrabony length > 9 mm) into the interforaminal area of the mandible with overdenture seems not to imperil long time survival and success rates (average survival rate 97.3 %). Randomized controlled studies exist for this indication. This procedure is followed routinely. Bone quality and primary stability seem to be important prognosis factors.

2.1.2 Immediate loading of implant-supported bridges

A minimum of 4 implants (intrabony length > 9 mm) into the mandible is necessary to support a fixed bridge (average survival rate: 96.3 %), if further parameters are met like for instance dentition, relation of the jaws or special anatomic factors.

2.2 Edentulous maxilla

2.2.1 Immediate loading of implant-supported overdentures

Only limited data on this subject could be found. Therefore an evidence based statement is not possible at present.

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2.2.2 Immediate loading of implant-supported bridges

Full-arch restorations in the maxilla require more implants than full-arch restorations in the mandible. Recent studies on full-arch restorations based on a minimum of 6 implants report the same predictability and survival rate as in the mandible.

2.3 Partially edentulous jaw (mandible or maxilla)

Immediate loading in partially edentulous jaw with fixed prosthesis is not well documented.
Therefore an evidence based statement is not possible at present for immediate loading.

Immediate restoration in partially edentulous jaw with fixed prosthesis is documented on a short term basis. Recent studies recommend one implant per missing tooth, whereas the implants are splinted by the restoration.

2.4 Single-tooth sites (in mandible or maxilla)

Most publications proclaim similarly high survival rates in relation to delayed loading. However most of these studies relate to reduced loads (immediate restoration, not immediate loading).
Nevertheless an evidence based statement is not possible at present.

Immediate restoration in single-tooth sites with crowns is well documented on a short term basis. Recent studies report immediate restoration only in the aesthetic zone whereas occlusal forces have to be avoided.

3. Decision criteria

The following criteria are of utmost importance, influence the number of implants placed and are discussed concerning the decision whether immediate restoration / immediate loading is possible:

a. Time of implant placement (immediate vs. delayed vs. late)
b. Primary stability
   This depends i.a. on:
   - Bone quality
   - Implant geometry
   - Implant surface
   - Surgical technique
   - Insertion torque (as recommended by the instructions for use)

zc. Implant splinting whenever possible
d. Restorations that promote splinting and reduce the load applied to the implants during healing period
e. Forces by antagonistic dentition

4. Risk factors:

a. Excessive functional loading
b. Parafunctional forces
c. Poor bone quality
d. Reduced bone volume
e. Presence of infection
f. Habits like for instance heavy smoking

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g. Poor oral hygiene
h. Poor compliance of patient
i. Other general and local risk factors

5. General requirements:

a. Comprehensive diagnosis and treatment planning
b. Critical evaluation of advantages and disadvantages for the patient
c. Experienced and skilled team
d. Informed consent of the patient

6. Summary

This consensus is mainly based on prospective clinical trials (evidence level 3) and a few randomized controlled clinical trials (evidence level 2).

Immediate restoration / immediate loading of dental implants in patients with good bone quality and definite primary implant stability document survival rates similar to the well documented data of survival rates of delayed loading.

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