

5 Years of Clinical Experience

Up to 5 years outcome of PALTOP Dental Implants Post-Marketing clinical follow up



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Purpose:

The purpose of this study was to assess PALTOP Dental Implant outcomes up to 5 years postimplant placement. 2 parameters were evaluated: implant survival rate and bone loss.

Study Population:

The study population includes 316 implants placed in 125 adult patients who are missing at least one posterior tooth in either the mandible or maxilla. The study included 74 females, 51 males; average age 56, sd 14, range 23-85.

The study includes all implants inserted in the chosen dental clinics, including diabetics, smokers and treatment with chronic medication. Out of 125 patients were 12 smokers, 5 diabetic and 11 cases of high blood pressure.

Materials:

PALTOP Advanced tapered implants made of Ti6Al4V ELI surface treated with sand blasting and acid etching were used in this study. Implant diameters varied between 3.25-5mm in diameter and the lengths varied between of 6-16mm.

Results:

Figure 6.1: Survival rate in upper jaw vs. lower jaw

| | Survival | Failure |
|-----------|--------------------|---------|
| Upper jaw | 154 (96.3%)(96.3%) | 6 |
| Lower jaw | 162 (98.2%) | 3 |
| Sum | 316 (97.2%) | 9 |

Fisher exact test, P=0.33

Figure 6.2: Survival rate in varying Bone Density

| | Survival | Failure |
|-----|-------------|---------|
| D1 | 24 (96%) | 1 |
| D2 | 149 (98.7%) | 2 |
| D3 | 132 (95.7%) | 6 |
| D4 | 11 (100%) | 0 |
| Sum | 316 (97.2%) | 9 |

Chi-square test, P=0.407

Figure 6.3: Survival rate for healed bone

| | Survival | Failure |
|-----------------------------|-------------|---------|
| One stage delayed placement | 162 (99.4%) | 1 |
| Two stage delayed placement | 70 (94.6%) | 4 |
| Sum | 232 (97.9%) | 5 |

Fisher exact test, P=0.57

Figure 6.4: Survival rate for implant placement into immediate extraction sites

| | Survival | Failure |
|-------------------------------|------------|---------|
| One stage immediate placement | 60 (93.8%) | 4 |
| Two stage immediate placement | 24 (100%) | 0 |
| Sum | 84 (95.5%) | 4 |

Fisher exact test, P=0.57

Figure 6.5: Survival rate for immediate loading of implants placed into healed bone

| | Survival | Failure |
|--|-------------|---------|
| Delayed placement with immediate loading | 47 (97.9%) | 1 |
| Delayed placement with delayed loading | 185 (97.9%) | 4 |
| Sum | 232 (97.9%) | 5 |

Fisher exact test, P=1

Figure 6.6: Survival rate for immediate loading of implants placed into immediate extraction sockets

| | Survival | Failure |
|--|------------|---------|
| Immediate placement with immediate loading | 51 (96.2%) | 2 |
| Immediate placement with delayed loading | 33 (94.3%) | 2 |
| Sum | 84 (95.5%) | 4 |

Fisher exact test, P=1

Figure 6.7: Survival rate with/without bone graft augmentation procedure

| | Survival | Failure |
|-----------------|-------------|---------|
| Augmentation | 143 (96.6%) | 5 |
| No Augmentation | 173 (97.7%) | 4 |
| Sum | 316 (97.2%) | 9 |

Fisher exact test, P=0.737

The results show overall success rate of 97.2% with 9 failed implants out of 316 implants placed. Out of the 9 implant failures 6 were in the upper jaw and 3 in the lower jaw. In regards to bone density, 1 implant failed in D1 bone, 2 in D2, 6 in D3 and none failed in D4.

When examining the implant placement procedure, the results show a 99.4% survival rate (1 failed implant) in one stage delayed placement, 94.6% (4 failed implants) in two stage delayed placement, 93.8% (4 failed implants) in immediate loading, and 100% survival rate (none failed) in two stage immediate loading.

In regards to loading of the implants: immediate loading with immediate placement resulted in 96.2% survival rate (2 failed implants); Immediate placement with delayed loading showed 94.3% (2 failed implants); immediate placement with delayed loading resulted in a 97.9% (1 failed implant) and delayed placement with delayed loading showed a 97.9% survival rate (2 failed implants).

96.6% survival rate (5 failed implants) was reported in implantation along with augmentation procedures, while 97.7% (4 failures) were reported for no augmentation.

Bone loss was measured in 99 patients. 31 showed some bone loss. 21 showed up to 1 mm bone loss, 8 showed up to 1 - 2 mm of bone loss and 2 showed 2-3mm bone loss. Bone loss was less prevalent in the upper jaw.

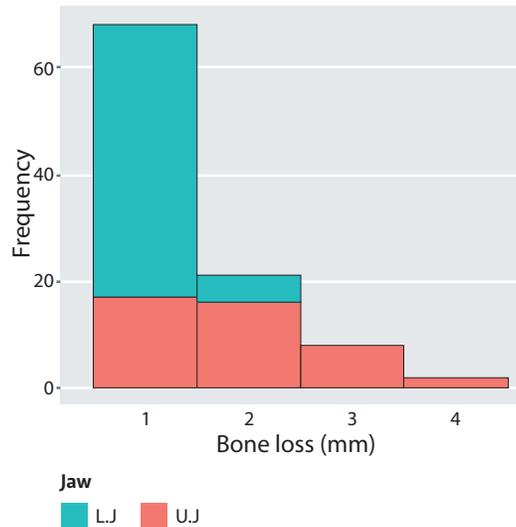


Figure 6.8: Bone loss Vs. Jaw

A Mann-Whitney U test concluded that bone loss is less frequent at the upper jaw (p-value= 2.5 10⁻⁸).

Conclusion:

The results of this study show **97.2%** survival rate in 316 implants followed up to 5 years.

PALTOP implants show excellent results for up to 5 years of follow-up, comparable with proposed standards in the literature ^{6.1, 6.2, 6.3, 6.4}.