

The seven-year cumulative survival rate of Osstem implants

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Introduction

This study was performed to analyze the cumulative survival rate of Osstem implants (Osstem Implant Co., Ltd.) over a seven-year period.

Materials & Methods

A total of 105 patients who had 467 Osstem implants that were placed at the Section of dentistry, Seoul National University Bundang Hospital(Seongnam, Korea) from June 2003 through December 2005 were analyzed.

Table 1. implant diameters

Diameter of fixture (mm)	Number	Diameter of fixture (mm)	Number
SS II		US III	
4.1	122	4.0	14
4.8	106	5.0	13
Total	228	Total	27
US II		GS II	
3.3	37	3.5	3
3.75	20	4.0	5
4.0	115	4.5	3
5.0	27	5.0	2
Total	199	Total	13

SS II, US II, US III, and GS II: Osstem implants (Osstem Implant Co., Ltd.).
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Table 2. Implant length

Length of fixture (mm)	Number	Length of fixture (mm)	Number
SS II		US III	
8.5	10	10.0	2
10.0	27	11.5	17
11.5	119	13.0	8
13.0	61	Total	27
15.0	11	GS II	
Total	228	10.0	2
US II		11.5	8
8.5	15	13.0	1
10.0	25	15.0	2
11.5	72	Total	13
13.0	64		
15.0	23		
Total	199		

SS II, US II, US III, and GS II: Osstem implants (Osstem Implant Co., Ltd.).
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Table 3. Distribution of implant position

Position	Number
Maxilla	
Anterior	54
Posterior	149
Total	203
Mandible	
Anterior	65
Posterior	199
Total	264

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Results

The seven-year cumulative survival rate of Osstem implants was 95.37%. The Cox proportional hazard model revealed that the following factors had a significant influence on survival rate; increased diameter, reduced prosthetic loading period and performance of bone grafting.

Table 4. Seven-year cumulative survival analysis (total: 467, censored: 447, event: 20)

Interval time(yr)	Proportional surviving	Cumulative Survival rate ¹ (%)	Hazard rate
1	0.9734	97.34	0.0022
2	0.9852	95.90	0.0012
3	0.9945	95.37	0.0005
4	1.0000	95.37	0.0000
5	1.0000	95.37	0.0000
6	1.0000	95.37	0.0000
7	1.0000	95.37	0.0000

¹ Life table method.

Table 5. Evaluation of other prognostic factors

Factor	Significance level ¹	Exp (B)	95% CI	
			Lower	Upper
Age	0.721	0.995	0.956	1.034
Sex	0.105	0.450	0.168	1.208
Diameter	0.021*	1.516	0.907	2.533
Length	0.963	1.134	0.797	1.613
Bone graft	0.046	0.494	0.195	1.247
1-Stage/2-Stage	0.547	1.466	0.524	4.103
Loading	0.000*	0.682	0.559	0.832

(CI: confidence interval)

¹ Cox proportional hazard model.

* P<0.05.

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Conclusions

The osstem implants showed satisfactory results over the seven-year study period.