

Cost-to-benefit ratio of Bonalive® granules

In a clinical study conducted with 50 patients

Bonalive® S53P4 bioactive glass granules is clinically proven to be a cost-effective and sustainable solution in the treatment of chronic osteomyelitis.

Bone infections are characterized by progressive infection resulting in the destruction of bone. Patients who undergo surgery for septic bone may be hospitalized for long periods of time, often developing a resistance to antibiotics.

In cases where the cavitary defect allows sufficient debridement of the necrotic tissue, the granules can be used in a one-stage procedure. Simultaneous with the inhibiting of bacterial growth, the granules heal the bone cavity by stimulating bone formation. This enables a smarter, more sustainable and cost-effective healing solution, reducing the length of hospital stays, while creating significant value across the entire healthcare ecosystem.*



43%

Less surgeries
T. Group: 1.3 surgeries
C. Group: 2.3 surgeries



44%

Shorter hospital stays
T. Group: 18.3 days
C. Group: 32.7 days

Study groups

- Treatment group (T)
- Control group (C)



15%

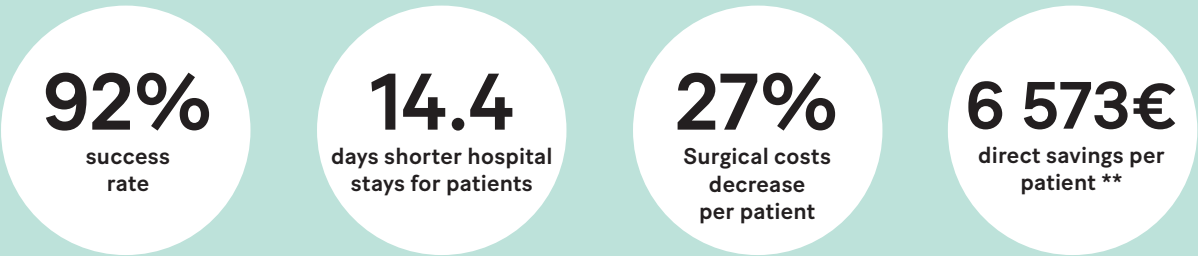
Higher success rate of eradication of infection
T. Group: 92%
C. Group: 80%



24%

Cost decrease per patient
T. Group: 20 568 €
C. Group: 27 142 €

* Geurts J, van Vugt T, Thijssen E, ArtsJ. Cost-effectiveness study of one-stage treatment of chronic osteomyelitis with bioactive glass S53P4. Materials 2019 Sep 30;12(19).



HOSPITAL COSTS	Treatment group	Control group	Result
Hospitalization costs	11 882 €	19 154 €	-38%
Surgical costs	2 575 €	3 535 €	-27%
Outpatient costs	1 327 €	1 446 €	-8%
MATERIAL COSTS			
Biomaterial costs	2 012 €	372 €	441%
Antibiotic costs	346 €	873 €	-60%
LABORATORY COSTS			
Imaging costs	1 961 €	1 143 €	72%
Lab costs	148 €	179 €	-17%
Microbiological costs	346 €	382 €	-9%

Study details

- Treatment group (T)
- Control group (C)

Patients were split into two groups:

- Treatment group:** 25 patients were treated with Bonalive® S53P4 bioactive glass granules, in a 1-stage surgery.
- Control group:** 25 patients were treated with gentamicin loaded PMMA bead chains, in a 2-stage surgery.

Bonalive® protocol with a 1-stage surgery

- Surgery:**
- Surgical debridement
 - Implantation of S53P4 bioactive glass granules
- Antibiotic treatment:**
- Culture specific
 - Intravenous 14 days
 - Oral 28 days

Antibiotic (PMMA) protocol with a 2-stage surgery

- Surgeries:**
- Stage 1
- Surgical debridement
 - Implantation of PMMA beads
- Stage 2
- Removal of PMMA beads
 - Defect filling with autologous bone graft or allograft
- Antibiotic treatment:**
- Culture specific
 - Intravenous 14 days
 - Oral 28 days

** 40 574€ savings per patient according to incremental cost-effectiveness ratio (ICER)