

# **REPORT CLINICAL AND RADIOLOGIC STUDY ON PATIENTS UNDERGONE TOTAL KNEE PROSTHESIS CEMENTED WITH G1A**

## **INTRODUCTION**

The scope of the present study is the clinical and radiologic evaluation with follow up on 2, 6 and 20 months on patients undergone surgery for implant knee arthroplasty by using the bone cement G1A manufactured by G21 s.r.l. .

That orthopedic bone cement has a low polymerization temperature, it is added with gentamicin and has an high viscosity. This bone cement implanted in all patients is added with gentamicin in order to minimize the risk of articular septic process and the consequent mobility of the knee prosthesis.

## **MATERIALS AND METHODS**

From September 2015 to December 2015, 39 patients have been undergone surgery for total knee arthroplasty Adler Genus with insert LS within the Second Orthopedics at the Hospital of Suzzara.

The group of patients is composed by 14 male and 25 female with average age of 70 years old (maximum 87, minimum 46), 21 were right knee and 18 left knee. The sizes of the knee prostheses were classified as follows.

**Male patients:** femoral size 4 on the right in 1 patient, femoral size 5 on the right in 3 patients, femoral size 6 on the left in 3 patients, femoral size 7 on the left in 1 patient.

Tibial size 4 on the right in 3 patients, tibial size 5 on the right in 3 patients, tibial size 6 on the right in 1 patient, tibial size 5 on the left in 5 patients, tibial size 6 on the left in 1 patient, tibial size 7 on the left in 1 patient. The LS inserts implanted are 13 with height 10mm and one with height 12mm.

**Female patients:** femoral size 3 on the right in 6 patients, femoral size 4 on the right in 5 patients, femoral size 5 on the right in 3 patients, femoral size 3 on the left in 6 patients, femoral size 4 on the left in 3 patients, femoral size 5 on the left in 5 patients, femoral size 6 on the left in 1 patient, tibial size 2 on the right in 3 patients, tibial size 3 on the right in 5 patients, tibial size 4 on the right in 5 patients, tibial size 5 on the right in 1 patient, tibial size

2 on the left in 4 patients, tibial size 3 on the left in 5 patients, tibial size 4 on the left in one patient, tibial size 5 on the left in one patient.

The inserts with 10mm height were 19, 12 of 5 mm height and 1 of 14mm height.

The orthopedic bone cement adopted was G1A with mixing performed by using vacuum pump activated with pedal and manometer. The homogeneous product applicable on prosthetic surfaces has been obtained after 60 seconds.

Total polymerization has been reached on average after 11-12 minutes from the beginning of the mixing phase.

All patients have been undergone intra-surgery prophylaxis with Cefamezin 2 grams and after 6 hours post-surgery with Cefamezin 1 gram.

## **RESULTS**

All patients subject of the present study have been evaluated after 2 months, 8 months and 20 months relying on clinical and radiologic evaluation.

No patient subject of the study has highlighted within radiologic exam after 2, 8 and 20 months any evidence mobility of the prosthetic implant.

In none of those patients area of peri-prosthetic bone reabsorbtion has been evident.

Finally, in none of those patients evidences of articular infection have been highlighted.

## **CONCLUSIONS**

The orthopedic bone cement G1A adopted in arthroplasty implants has shown optimal capacity of fixation of the prosthetic implant with no evident area of bone peri-prosthetic suffering.

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