VANCOMYCIN PRESOAKING OF HAMSTRING GRAFTS REMOVES THE OCCURRENCE OF SEPTIC ARTHRITIS IN PRIMARY ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION
Disclosure

- David Figueroa and Rafael Calvo are consultants for Stryker.
- David Figueroa is part of the Board of ISAKOS and SLARD.
Introduction

- Postoperative septic arthritis is an uncommon but potentially devastating complication after anterior cruciate ligament (ACL) reconstruction.

- Incidence rate from 0.14 to 1.8 %

- There are few studies, suggesting that autograft presoaking with Vancomycin can decrease the rate of septic arthritis following an ACL reconstruction.
Objective

The objective of the study was to compare the rate of postoperative septic arthritis in Vancomycin presoaked grafts versus non-presoaked grafts in hamstring autograft ACL reconstruction.
Materials and Methods

- Retrospective review.

2 consecutive periods: April 2013-October 2015 (pre Vancomycin protocol, Group 1) and November 2015-May 2018 (Vancomycin protocol, Group 2).

- Patient that consecutively underwent arthroscopic primary ACL reconstruction with a hamstring autograft.

- All the patients were operated by 2 senior knee surgeons with 28 years of experience each.
Surgical Technique

- Standard semitendinosus and gracilis tendon harvesting
- ACL reconstruction was made using a retrodrill to make the femoral tunnel and a standard anterograde technique to make a full tibial tunnel
- Fixation was done with TightRope (Arthrex, Naples, FL) on the femoral side and a bioasorbible interference screw (Arthrex, Naples, FL) on the tibial side
Surgical Technique

- In the pre Vancomycin protocol period, all the patients received preoperative intravenous (IV) antibiotics. In the following period (Vancomycin protocol), all the patients received preoperative IV antibiotics and in addition to that the graft was presoaked in a Vancomycin solution according to the study made by Vertullo et al [8]
Surgical Technique

- The prophylactic antibiotic protocol consisted in a single dose of 2 g of preoperative IV cefazolin or a single dose of 1 g of preoperative IV vancomycin, if a penicillin allergy existed.

- The presoaking was done by wrapping the harvested graft after its preparation in a surgical sponge that had been previously soaked in 5mg/mL Vancomycin solution. The Vancomycin solution was prepared by dissolving 500 mg of Vancomycin powder in 100 mL of sterile saline solution.
VANCOMYCIN PRESOAKING OF HAMSTRING GRAFTS IN PRIMARY ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

**Results**

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>( P ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative septic arthritis</td>
<td>4 (1.7%)</td>
<td>None</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>TOTAL</td>
<td>230</td>
<td>260</td>
<td></td>
</tr>
</tbody>
</table>
4 postoperative infections were presented at an average 21.7 days after the ACL reconstruction (range 16-25).

Diagnosis of septic arthritis was made using the clinical symptoms plus cytological analysis of a joint aspiration (cell count >50,000/uL + > 90% neutrophils)

Staphylococcus epidermidis was isolated in 2 of the cases, and in the other 2 patients, no organism was isolated in the cultures.
Discussion

- Our study confirmed the results of previous studies, where no infection in ACL reconstruction has been reported using hamstring grafts presoaking with Vancomycin.

- Vertulo et al [8] compared 285 patients (Group 1) and 870 patients (Group 2): Infection rate: 1.4% vs 0%, respectively.

- Perez-Prieto et al [6] compared 810 patients (Group 1) and 734 patients (Group 2): Infection rate: 1.85% vs 0%, respectively.
Conclusion

- Vancomycin presoaking of hamstring autografts in ACL reconstruction eliminated the occurrence of postoperative septic arthritis during the studied period compared to the immediate previous period, where no Vancomycin presoaking grafts were used. This finding confirms what is already published in previous studies.
VANCOMYCIN PRESOAKING OF HAMSTRING GRAFTS IN PRIMARY ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

References


