Title: Transtibial versus transportal techniques for anterior cruciate ligament (ACL) reconstruction: a clinical study of military men

Authors’ names and affiliations

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Abstract

Background: The exact incidence of anterior cruciate ligament (ACL) injuries is unknown. Reconstruction of ACL using arthroscopic single-bundle method is a common procedure with a success rate of 83% to 95%. However, some studies have shown that the transportal method results in a higher success rate than transtibial approach. Other studies showed that both approaches have equal rate of success. The aim of this study was to investigate which one of the two methods has nearest biomechanics to the original ACL and better concurrence for patients.

Materials and Methods: This study was a cross sectional (prospective) follow up. The clinical results of the ACL reconstruction in military men with pure ACL rupture were evaluated and followed up. In one group (n=26), ACL reconstruction was done using the transportal (TP) technique and in the other group (n=20), the ligament was reconstructed using the transtibial (TT) method. Preparation of autografts was same in both groups. Knee instability tests were done before and 1, 3 and 6 months after the surgery. At the last follow-up, the patients’ satisfactory was compared between both groups by using Lysholm scores. The angle between the axis of the graft and joint line was measured after surgery. The correlation between graft angle and patients’ concurrence (Lysholm score) after surgery as well as instability testes were compared between both groups.

Results: At the final follow-up, eight patients (40%) in the TT group and five cases (19.23%) in the TP group had a positive pivot test. Three patients (15%) in the TT group and nine patients (34.61%) in the TP group had a positive Lachman test. However, there was no significant statistically difference between patients in the pivot test (P=0.06) as well as Lachman test (P=0.35) between the two groups. Mean Lysholm scores were 92.8 ± 2.5 and 93.2 ± 2.8 in the TT and the TP groups, respectively (P = 0.51). The averages of the graft angle were 68.7 ± 2.9 and 43.6 ± 4.1 in the TT and the TP groups, respectively (p = 0.001). Any correlation between the graft angle and the patients’ concurrence (Lysholm score) after surgery (P>0.05) and any correlation between the graft angle and the instability testes (P>0.05) were not observed between the two groups.

Conclusion: Considering to the results, no significant clinical differences were found between the two techniques and therefore, both of them can create good results.

Keywords: Anterior cruciate ligament (ACL) reconstruction, transtibial technique, transportal technique, graft angle
Introduction

The knee ligament damage is increasing in recent years due to the expansion of professional sports activities. The most common of these damages is rupture of anterior cruciate ligament (ACL). If the ruptured ACL is not treated, it may lead to knee osteoarthritis and loss of patients’ ability to exercise and military activity. The exact incidence of ACL rupture is unknown. In the United States, in each year, near 200,000 cases of ACL ruptures occur and near 100,000 surgeries for ACL reconstruction are done (Azar et al. 2013; Riboh et al. 2017; Cury et al. 2011; Zantop et al. 2008).

ACL is the first important ligament to limit the tibia's movement to the anterior side. As a secondary function, ACL stabilizes the rotational and the varus-valgus movements of the tibia at the full extension position (Azar et al. 2013; Kanamori et al. 2002; Loh et al. 2003; O’Neill 1996).

Two major bundle of ACL are the anteromedial (AM) and posterolateral (PL) bundles. While the knee extension, the AM is moderately lax and prevents the anterior-posterior movements of the knee. While the knee flexion, the PL is relax and gives rotational stability to the knee (Azar et al. 2013; Kanamori et al. 2002, Bicer et al. 2010; Zantop et al. 2007). In young patients and military forces, ACL reconstruction through surgery is important to repair the ligament and to prevent the knee instability, meniscus tear, chondral lesions, and early osteoarthritis (Gavriilidis et al. 2008; Siebold et al. 2008). Various surgery methods and different grafts have been used to ACL reconstruction (Azar et al. 2013). Two main methods for ACL reconstruction are open and arthroscopic surgery methods. Open and arthroscopic surgery methods is classified into several subgroups based on the selected graft, the manner to create the tunnel in tibia and femur, and the method of graft fixation (Azar et al. 2013; Riboh et al. 2017, Mirzatolooei et al. 2015). The two methods differ in terms of how they are performed, the place of the created tunnels, and the graft position. They may have different outcomes for patients based on the closeness of the anatomy and biomechanics of the repaired ligament to the primary ACL (Azar et al. 2013; Riboh et al. 2017, Mirzatolooei et al. 2015).

Nowadays, the arthroscopic reconstruction methods are increasingly used since they are fast and less invasive, result in faster remission and have lower costs. Among them, transportal (TP) and transtibial
(TT) are two standard methods that are widely used by orthopedic surgeons (O’Neill 1996; Kim et al. 2011). Recent studies have shown that the two-bundle method for ACL reconstruction has more advantages than the single-bundle method to make the knee-rotation stability (Kopf et al. 2011; Tudisco and Bisicchia 2012). Suitable places of femoral and tibial tunnels and proper fixation of a graft are essential factor to obtain good outcomes of the ligament reconstruction (Zantop et al. 2007; Aglietti et al. 2010).

ACL reconstruction can be performed through TT technique (Azar et al. 2013; Riboh et al. 2017, Mirzatolooei et al. 2015). Drilling of femoral tunnel by TT technique is extensively utilized in ACL reconstruction. Some reports suggest that using the TT technique may place the graft in a non-anatomical location resulted in instability. Using an anteromedial portal or TP technique to drill the femoral tunnel may place the graft in a more anatomically location leading to better knee stability. (Azar et al. 2013; Riboh et al. 2017, Mirzatolooei et al. 2015) For more explanation about details of ACL reconstruction by TT and TP techniques, readers are referred to study previous reports (Yagi et al. 2002; Tashiro et al. 2014; Loh et al. 2002).

Considering the high prevalence of ACL injuries, there is a necessity to perform surgical repair of ACL in young and active patients or military forces. Hence, finding the best method with the best post-surgery knee function, less complications and lower costs is crucial. The aim of this study was to determine the clinical results of arthroscopic transtibial and transportal techniques for ACL reconstruction.

**Materials and methods**

This study was a randomized and double-blinded clinical trial. The ethics committee of Baqiyatallah University of Medical Sciences, Tehran, Iran provided ethics approval. A number of patients referred to the orthopedic clinic of Baqiyatallah Hospital, who were diagnosed with ACL rupture, were randomly selected for ACL reconstruction using TT or TP methods. The patient data remained confidential and
written informed consent was obtained from the patients. The study was approved by the ethical
commitee of Baqiyatallah University of Medical Sciences (code: IR.BMSU.REC.1397.003).

A form including five parts was prepared for each patient. The first part included the pre-operation
information. The second to fifth parts included post-operation information in four stages after surgery.

Data including range of the joint movement, pain, ACL examinations were recorded per visit.

Moreover, the degree of the patients’ satisfaction (based on the score of Lysholm table) at the end of 6
month after the ACL surgery (through transtibial or transportal techniques) was compared. Lysholm
table is a standard and global table to calculate the knee function score.

The Pivot-shift, Lachman, anterior drawer test (ADT), knee range of motion (ROM), infection rate, the
amount of knee instability after the ACL surgery (using TT or TP techniques) were also compared.

True anteroposterior radiograph of the knee is used to measure the alpha angle (the angle between the
femoral tunnel and joint line) for each patient. To measure alpha angle, a tangent line at distal of the
femoral condyle is drawn (line “b” in the Figure 1 a and b). Then, the entrance site of the reamer to the
lateral condyle of femur and the endobutton site are connected via a line (line “a” in the Figure 1 a and
b). The angle of the intersection of the two lines (lines a and b) is measured as alpha angle and is
recorded in the patients’ data sheets.

Data analysis was done using SPSS software. The t-test and Chi2 test were performed to data analysis.

Inclusion criteria were as follow: using TT or TP techniques for ACL reconstruction, using the
biointerference screw for tibial fixation and endobutton for femoral fixation, using hamstring autograft,
using the gracilis and semitendinosus tendons, age less than 40 years, being a male, positive
examination for ACL rupture, MRI positive results for ACL rupture, MRI negative results for meniscus
rupture (grade 2 or higher) and PCL rupture, negative results of knee Radiography evaluating the varus-
valgus alignment, negative results of knee Radiography assessing moderate to severe osteoarthritis and
lack of the heart diseases.
One month, three months and six months after operation, patients were examined. In order to refine the results, the same rehabilitation protocol was used for all patients. The postoperative data were recorded in the pre-prepared form for each patient.

Exclusion criteria were as follow: Age more than 40 years, damaged meniscus (grade 2 or higher), simultaneous damage of the chondral or osteochondral, using of non-endobutton methods to fix grafts, non-primary surgery for ACL reconstruction, using allografts instead of autograft, non-TP and non-TT techniques of surgery, infection, using hamstring single-bundle grafts, failure to refer patients for follow-up at determined intervals, failure to perform an exact rehabilitation.

**Results**

The 53 patients were included to the study in which 30 subjects were placed in the TP group and 23 cases were included in the TT group.

Due to post-operative infection and severe meniscus injury that was diagnosed during surgery, a number of participants were excluded from the study.

Finally, 26 and 20 patients were remained in the TP and TT groups, respectively. The mean age of the patients in the TP and TT groups were 27.7 and 25.45 (years), respectively. There was no statistically significant difference between the patients’ age in the two groups (Table 1).

**Mean of Visual Analog Scale for Pain (VAS pain) before and after the surgery**

The mean of VAS pain before and after arthroscopic TT and TP surgeries were determined and compared. No significant difference was observed in the VAS score in the TP and TT groups at any time intervals. The level of pain in the two TT and TP groups was same and the used technique did not affect the pain severity. The VAS score of the TP group was lower than TT group after 6 month of the operation. However, P value (0.08) was not significant between the two groups. (Table 2)

**Mean of ROM before and after the surgery using TT or TP techniques**
The ROM volume in both methods was same at different time intervals. There was no significant
difference between the ROM between the two techniques.

Before the surgery, the mean of ROM in the TT and TP groups were 143.5 and 144.2, respectively (P-
value = 0.43). One month after the operation, the mean of ROM in were 109.2 and 106.3 in the TT and
TP groups respectively without any significant difference (P-value = 0.61). Three months after the
operation, the mean of ROM in the TP and TT groups were respectively 140.9 and 137.5 and had no
significant difference (P-Value = 0.28). Six month after the operation, the mean of ROM in the TP and
TT groups were respectively 145 and 144.25 and had no significant difference (P-Value = 0.1)(Table 3)

The Pivot-shift results before and after the surgery
At different time intervals after the surgery using TT or TP methods, there was no significant difference
in the Pivot-shift results. (Table 4)

Before surgery, Pivot-shift test was positive in 26 subjects of the TP group and 19 subjects of the TT
group. At the end of the study, the test was positive in the 5 cases of the TP group and in the 8 people of
the TT group. There was no significant difference between the two groups in the results of the Pivot-
shift test (P-value = 0.06). (Table 4) One month after the operation, there was no significant difference
between the two groups in terms of Pivot-shift results (P-value = 0.07). (Table 4)

Three months after the operation, there was no significant difference between the two groups in the
results of the Pivot-shift test (P-value = 0.06) (Table 4) Six months after the operation, there was no
significant difference between the two groups in terms of Pivot-shift results (P-Value = 0.06). (Table 4)

Results of Lachman test before and after the surgery
There was no significant difference in the Lachman test results between the two groups with different
surgical techniques. There was no significant difference between the TT and TP groups in the test
results in different time intervals.
Before the operation, the Lachman test was positive in 25 patients of TP group and in 19 patients of TT group. Six month after the surgery, the Lachman test was positive in 9 patients of TP group and in 3 patients of TT group. There was no significant difference between the two groups (P value> 0.05). One month after the operation, the Lachman test was positive in 25 patients (54.3%) of TP group and in 19 patients (41.3 %) of the TT group. There was no significant difference between the two groups (P-Value = 0.2).

Three months after the operation, the Lachman test was negative in 21 patients (45.7%) of TP group and in 17 patients (37.0 %) of the TT group. There was no significant difference between the two groups (P value=0.28). Six month after the surgery, the Lachman test was negative in 17 patients (37.0%) of TP group and in 17 patients (37.0 %) of the TT group. There was no significant difference between the two groups (P value=0.35). (Table 5)

Results of the ADT test before and after ACL reconstruction

There was no significant difference in the results of the ADT test between the two group, and both groups were similar.

Before the operation, in the TP group, 21 patients had the ADT score 3+, four patients had the ADT score 2+ and one patient had the ADT score 1+. In the TT group, 13 patients had the ADT score 3+, 6 patients had the ADT score2+, and two patients had the ADT score +1.

One month after the operation, in the TP group, five people had the ADT score +1. In the TT group, 6 patients had ADT score + 1. Overall, there was no significant difference in ADT results between the two groups (P-value = 0.4).

Three months after the operation, in the TP group, 17 subjects (37%) had the ADT score +1. In the TT group, 14 cases (30.4%) had the score +1. There was no significant difference in ADT between the two groups (P-Value = 0.1).
Six months after the operation, 21 subjects (45.7%) in the TP group, and 12 subjects (26.1%) in the TT group had ADT score +1. There was no significant difference in ADT between the two groups (P-Value = 0.71).

**Measurement of the angle between the graft region and joint line (alpha angle) using true anteroposterior knee radiograph**

Mean of the measured angles were not similar between both surgical techniques. There was a significant difference between the TT and TP groups at the measured angle. The mean of the measured angles in the TP and TT groups were 43.6° and 68.7°, respectively (P-value = 0.001).

**Lysholm score and patients’ satisfaction after the surgery**

The mean of LS score in the TT group was 92.8 (good) and in the TP group was 93.2 (good). There was no significant difference in postoperative satisfaction between the two groups (p = 0.51).

**Relationship between patients’ satisfactory (LS score) and the angle between the graft region and joint line (alpha angle) in the postoperative knee radiography**

There was a weak correlation between the LS score and the measured angle between the TT and TP groups, but this correlation was not statistically significant. The P value for the TP group was 0.204. In the TT group P value was 0.420.

**The relationship between the alpha angle and ADT, Pivot-shift and Lachman tests**

Results of the correlation analysis showed that there was not a significant correlation between the alpha angle and Pivot-shift, Lachman and ADT tests between the TP and TT groups (p > 0.05).

**Discussion**
As far as we know, there is no published article comparing the patients’ satisfaction after using the arthroscopic TP or TT methods for ACL reconstruction. In this study, the patients’ satisfaction was investigated. In this study, it was also attempt to investigate the relationship between the alpha angle and the knee stability between the TT and TP groups. As far as we know, the mentioned factors are addressed for the first time in this study.

Considering to our results, at the end of the sixth month, there were differences for each group in the Lachman, Pivot-shift, and ADT tests. For example, at the end of the study, the Pivot-shift test of the TT group was about 6% higher than the TP group. However, this difference was not statistically significant. At the end of the study, the results of the Lachman and ADT tests for the TP group were respectively 18% and 20% higher than the TT group. However, this differences were not statistically significant.

The calculated Lysholm scores for the two groups were good without any significantly difference.

Considering to the Lachman and ADT results, TP method may provide a little more stability in anterior-posterior extension and translation of the knee since the graft is located at the most anteromedial aspect of the area. However, this was not statistically significant in the current and other studies (Riboh et al. 2017; Jepsen et al. 2007).

Compared to TT method, TP method may also create a little more stability in the knee flexion and rotation, since the graft is located at the most posterolateral aspect of the area. However, this was not statistically significant in the our study and other reports (Riboh et al. 2017; Jepsen et al. 2007).

In a study on the biomechanical aspects of the two TP and TT methods for the ACL reconstruction, Jonathan et al. did not find any significant difference between the two methods (Riboh et al. 2017) confirming the results of this study.

Mirzatolooei et al. studied the two mentioned methods of ACL reconstruction. They found that the TP method had significantly better clinical results than TT technique (Mirzatolooei et al. 2015). Their results are in contrast of our findings that showed no significant differences in terms of clinical findings between the TT and TP groups.
In 2016, Chalmers et al. conducted a systematic review on biomechanical studies and clinical outcomes of both TT and TP methods. Some studies reported better clinical outcomes of the TP method, while other studies did not mention any differences between the two methods (Chalmers et al. 2016). There was no any study to report better clinical outcomes of the TT method compared to the TP method. In sum, it was indicated that ACL reconstruction using TP could possibly improve the clinical and biomechanical outcomes, but the TT method could also have similar results (Chalmers et al. 2016).

Results of our study showed that there is no clear difference in the outcome of both TT and TP techniques.

Cury and colleagues compared TT and TP surgery methods performed for 90 patients (from 2009 to 2012). There was no significant differences in the results of Pivot-shift, ADT, giving way and ROM. Postoperative satisfaction was the same in both TT and TP groups. The mentioned results are in accordance with the results of our study (Cury et al. 2011).

In 2011, in a study conducted by Myung et al. two TP and TT surgery techniques for ACL reconstruction were compared. There was no difference in the outcomes of the two techniques. the surgery. The percentage of the negative Lachman test was 80% to 85% in both groups. The percentage of the negative Pivot-shift test was similar in both groups (between 75% and 80%) (Kim et al. 2011). In our study, the Lachman and Pivot-shift tests were not significantly different in both groups.

In a meta-analysis, Riboh and colleagues showed that there was no significant clinically difference between these two surgical techniques (Riboh et al. 2017).

**Conclusion**

Considering the results of this study including the same patients’ satisfaction, the same results of Pivot-shift, Lachman and ADT tests after both surgical methods, and no significant correlation between the alpha angle and the clinical tests, it seems that both mentioned techniques may have the same outcomes as well as clinical satisfaction for the patients.
Abbreviations

TT: transtibial; TP: transportal; ACL: Anterior cruciate ligament; AM: the anteromedial; PL: posterolateral; ADT: anterior drawer test; ROM: knee range of motion; LS: Lysholm score; VAS: visual analog scale for pain

Authors’ contributions

All authors have read and approved the final submitted manuscript. Contributions are as follows:

Research design, or the acquisition, analysis or interpretation of data: AR, SH, MJB. Drafting the paper or revising it critically: SH. Approval of submitted and final versions: AR, SH, MJB.

Competing interests

The authors declare that they have no competing interests.

Consent for publication

Not applicable.

Ethics approval and consent to participate

The study was approved by the ethical committee of Baqiyatallah University of Medical Sciences (code: IR.BMSU.REC.1397.003).

Author details

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References


Mirzatolooei et al. (2015) Comparison of short term clinical outcomes between transtibial and transportal TransFix® femoral fixation in hamstring ACL reconstruction.


Cury RPL et al. (2011) Comparative evaluation of the results in the reconstruction of the ACL, whit a minimum follow-up of two years. Rev Bras Ortop 52(3):319-324


Figure caption

**Figure 1.** Radiographic images of the knee after ACL reconstruction using transtibial (a) or transportal (b) methods.
Table 1. Demographic data of the patients

<table>
<thead>
<tr>
<th>Surgery method</th>
<th>Frequency</th>
<th>Mean age</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportal</td>
<td>26</td>
<td>27.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Transtibial</td>
<td>20</td>
<td>25.4</td>
<td>5.7</td>
</tr>
</tbody>
</table>
Table 2. Determination and comparison the VAS pain before and after the surgery.

<table>
<thead>
<tr>
<th>Surgery method</th>
<th>Before the surgery</th>
<th>One month after the surgery</th>
<th>Three month after the surgery</th>
<th>Six month after the surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportal</td>
<td>0.96</td>
<td>3.1</td>
<td>0.8</td>
<td>0.23</td>
</tr>
<tr>
<td>Transtibial</td>
<td>1.6</td>
<td>3.3</td>
<td>0.9</td>
<td>0.5</td>
</tr>
<tr>
<td>P- Value</td>
<td>0.17</td>
<td>0.49</td>
<td>0.59</td>
<td>0.08</td>
</tr>
</tbody>
</table>
Table 3. Comparison of ROM means before and after the surgery.

<table>
<thead>
<tr>
<th>Surgery method</th>
<th>ROM mean Before the surgery</th>
<th>One month after the surgery</th>
<th>Three month after the surgery</th>
<th>Six month after the surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportal</td>
<td>145</td>
<td>140.9±6.4</td>
<td>140.9±6.4</td>
<td>145</td>
</tr>
<tr>
<td>Transtibial</td>
<td>143.50±4.005</td>
<td>109.2±14.8</td>
<td>137.5±9.9</td>
<td>144.25±2.44</td>
</tr>
<tr>
<td>P- Value</td>
<td>0.43</td>
<td>0.61</td>
<td>0.28</td>
<td>0.1</td>
</tr>
</tbody>
</table>
### Table 4. Results of the Pivot-shift test before and after the surgery.

<table>
<thead>
<tr>
<th>Surgery method</th>
<th>Before the surgery</th>
<th>One month after the surgery</th>
<th>Three month after the surgery</th>
<th>Six month after the surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Frequency (Percentage)</td>
<td>Number</td>
<td>Frequency (Percentage)</td>
</tr>
<tr>
<td>Transportal</td>
<td>Positive</td>
<td>26</td>
<td>56.53%</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>0</td>
<td>0%</td>
<td>26</td>
</tr>
<tr>
<td>Transtibial</td>
<td>Positive</td>
<td>19</td>
<td>41.5%</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>1</td>
<td>2.2%</td>
<td>17</td>
</tr>
<tr>
<td>P- Value</td>
<td>0.4</td>
<td>0.07</td>
<td>0.06</td>
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</tr>
</tbody>
</table>
Table 5. Results of the Lachman test before and after the surgery.

<table>
<thead>
<tr>
<th>Lachman test</th>
<th>Before the surgery</th>
<th>One month after the surgery</th>
<th>Three month after the surgery</th>
<th>Six month after the surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Frequency (Percentage)</td>
<td>Number</td>
<td>Frequency (Percentage)</td>
</tr>
<tr>
<td>Transportal</td>
<td>Positive</td>
<td>25</td>
<td>54.34%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>1</td>
<td>2.17%</td>
<td>25</td>
</tr>
<tr>
<td>Transtibial</td>
<td>Positive</td>
<td>19</td>
<td>41.30%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>1</td>
<td>2.17%</td>
<td>19</td>
</tr>
<tr>
<td>P- Value</td>
<td>0.2</td>
<td>0.2</td>
<td>0.28</td>
<td>0.35</td>
</tr>
</tbody>
</table>
Table 6. Results of the ADT test before and after the surgery.

<table>
<thead>
<tr>
<th>Surgery method</th>
<th>ADT test</th>
<th>Before the surgery</th>
<th>One month after the surgery</th>
<th>Three month after the surgery</th>
<th>Six month after the surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Frequency (Percentage)</td>
<td>Number</td>
<td>Frequency (Percentage)</td>
<td>Number</td>
</tr>
<tr>
<td>Transportal</td>
<td>0</td>
<td>0%</td>
<td>21</td>
<td>45.7%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>1+</td>
<td>2.2%</td>
<td>5</td>
<td>10.9%</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>2+</td>
<td>8.7%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>45.7%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transtibial</td>
<td>0</td>
<td>-</td>
<td>14</td>
<td>30.4%</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1+</td>
<td>2.2%</td>
<td>6</td>
<td>13%</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>2+</td>
<td>13%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>28.3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

P-Value | 0.7 | 0.4 | 0.1 | 0.71 |