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1999 1 2000 12

30 (1, 2) 32 (1, 2) 3 (1, 2) 3 (1, 2)

30 (1, 2) 32 (1, 2) 3 (1, 2)

10 0.05

SPSS 10
I. 

...
1970 Klebanoff showed Bentley autotransfusion system. 1980 Flynn showed Bentley autotransfusion system.

In 1972-1973, Cram and associates used the Bentley autotransfusion system. In 1973, Murdock and associates used the Bentley autotransfusion system. In 1974, Wood and associates used the Bentley autotransfusion system. In 1975, Walsh and associates used the Bentley autotransfusion system. In 1976, Donaldson and associates used the Bentley autotransfusion system. In 1977, Leary and associates used the Bentley autotransfusion system. In 1978, McKeown and associates used the Bentley autotransfusion system. In 1979, Flynn and associates used the Bentley autotransfusion system.
II. 

1. 

1999년 1월 2일 2000년 12월 동안에 수술을 받은 환자 중 12명의 중 3명이 죽었습니다. 그들에게는 일반적인 진단과 치료에 대해 자세히 설명하고, 사망률을 줄이기 위한 조치를 취하였습니다. 30일 (3월 1일)에 완료된 검사 결과를 보여드리고, 이 검사는 물론 다른 검사도 수행하였습니다.

2. 

11 gm/dL보다 높은 혈당을 보인 환자 중 7명이 죽었습니다. 그들의 사망은 3일간의 치료 후에 발생하였습니다. 이는 그들이 혈당을 제어할 수 없었다는 점을 나타냅니다. 또한 2명의 환자도 2일간의 치료 후에 사망하였습니다.

3. 

320 ml 이상의 흉부내 종양을 가진 환자 중 6명이 죽었습니다. 그들은 6일간의 치료 후에 1명이 사망하였습니다. 50cc 이상의 종양을 가진 환자 중 6명이 사망하였습니다.
4. 

218 38.3°C 2.18

SPSS 10

(independent-samples t test) (Chi-Square test)
Pearson correlation analysis (Pearson correlation analysis) of the data shows no significant correlation. The p value is 0.05, indicating no significant relationship between the variables under analysis.
III. III.

1. 1. 

[Text in Chinese]

(Table 1).

(Table 2).
Table 1. Clinical features of patients with autologous and homologous transfusion

<table>
<thead>
<tr>
<th></th>
<th>Autologous</th>
<th>Homologous</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>30</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Sex (male/female)</td>
<td>13/17</td>
<td>16/16</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>$53.6 \pm 12.7$</td>
<td>$56.9 \pm 6.9$</td>
<td>NS*</td>
</tr>
<tr>
<td>Seg. time in surgery (min)</td>
<td>$142.6 \pm 43.9$</td>
<td>$144.6 \pm 67.0$</td>
<td>NS</td>
</tr>
<tr>
<td>Seg. estimated blood loss (ml)</td>
<td>$475.8 \pm 216.9$</td>
<td>$561.7 \pm 124.7$</td>
<td>NS</td>
</tr>
<tr>
<td>Seg. transfused units</td>
<td>$1.7 \pm 0.8$</td>
<td>$2.2 \pm 0.9$</td>
<td>NS</td>
</tr>
<tr>
<td>Total transfused units</td>
<td>$2.0 \pm 0.7$</td>
<td>$3.5 \pm 1.8$</td>
<td>0.001</td>
</tr>
<tr>
<td>Days on IV antibiotics</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

The values shown are mean ± SD unless otherwise noted.

The p values were determined by independent-samples t test, level 5%.

* Not significant
Table 2. Laboratory features of patients with autologous and homologous transfusion

<table>
<thead>
<tr>
<th></th>
<th>Autologous</th>
<th>Homologous</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop. Hb (gm/dL)</td>
<td>12.5 ± 1.3</td>
<td>13.3 ± 1.5</td>
<td>NS</td>
</tr>
<tr>
<td>Preop. Hct (%)</td>
<td>37.1 ± 4.1</td>
<td>39.6 ± 4.2</td>
<td>NS</td>
</tr>
<tr>
<td>Preop. Platelet (x10^3/uL)</td>
<td>221.6 ± 73.4</td>
<td>271.7 ± 54.7</td>
<td>NS</td>
</tr>
<tr>
<td>PO. 3d Hb (gm/dL)</td>
<td>10.4 ± 1.3</td>
<td>11.0 ± 1.7</td>
<td>NS</td>
</tr>
<tr>
<td>PO. 3d Hct (%)</td>
<td>30.0 ± 3.8</td>
<td>31.5 ± 4.5</td>
<td>NS</td>
</tr>
<tr>
<td>PO. 3d Platelet (x10^3/uL)</td>
<td>225.9 ± 54.8</td>
<td>280.9 ± 103.7</td>
<td>NS</td>
</tr>
</tbody>
</table>

The values shown are mean ± SD.

The p values were determined by independent- samples t test, level 5%.

* Not significant
2. Table 3

| Table 3 | Pearson correlation 0.448, p value 0.015 | Table 4 | Pearson correlation 0.448, p value 0.015 | Table 5 | Pearson correlation 0.448, p value 0.015 |
Table 3. Postoperative complications of patients with autologous and homologous transfusion

<table>
<thead>
<tr>
<th></th>
<th>Autologous (n=30)</th>
<th>Homologous (n=32)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postop. Infection</td>
<td>1</td>
<td>0</td>
<td>NS&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wound infection</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>UTI</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Pneumonia</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cellulitis</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Viral infection</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Incidence of fever</td>
<td>19 (63.3%)</td>
<td>20 (62.5%)</td>
<td>NS&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Days of fever&lt;sup&gt;†&lt;/sup&gt;</td>
<td>1.63 ± 0.68</td>
<td>3.00 ± 1.73</td>
<td>0.005&lt;sup&gt;‡&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

The p values were determined by Chi-Square test, level 5%.

<sup>*</sup>Not significant

<sup>†</sup>The values shown are mean ± SD.

<sup>‡</sup>The p values were determined by independent-samples t test, level 5%.
Table 4. Postoperative clinical results of patients with autologous and homologous transfusion

<table>
<thead>
<tr>
<th></th>
<th>Autologous (n=30)</th>
<th>Homologous (n=32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>21 (70%)</td>
<td>26 (81.3%)</td>
</tr>
<tr>
<td>Good</td>
<td>6 (20%)</td>
<td>4 (12.4%)</td>
</tr>
<tr>
<td>Fair</td>
<td>3 (10%)</td>
<td>2 (6.3%)</td>
</tr>
<tr>
<td>Poor</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Chi-Square test, p value 0.710.

Table 5. Overall satisfaction for transfusion in the autologous and homologous transfused groups

<table>
<thead>
<tr>
<th></th>
<th>Autologous (n=30)</th>
<th>Homologous (n=32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied</td>
<td>23 (76.7%)</td>
<td>4 (12.6%)</td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>4 (13.3%)</td>
<td>26 (81.1%)</td>
</tr>
<tr>
<td>Not judged</td>
<td>3 (10.0%)</td>
<td>2 (6.3%)</td>
</tr>
</tbody>
</table>

Chi-square test, p value 0.001.
IV. °í  Âû

ôÃß ¼ö¼úÀº ¹«±ÕÀû ¼ö¼ú·Î¼­ ¼ö¼ú ÈÄ Ã¢»ó °¨¿°Àº 1%³»Áö 2%·Î ¿¬ºÎ.

º» ¿¬±¸¿¡¼­ ÀÚ°¡ ¼öÇ÷±º°ú µ¿Á¾ ¼öÇ÷À» °¢°¢ ½ÃÇà ÈÄ Ã¢»ó °¨¿°, ¿ä·Î °¨¿°, ºØ¼Ò¿°, ¿øÀÎ ¹Ì»ó ¹ß¿­(Fever of Unknown Origin)ÀÇ ¼ú ÈÄ °¨¿°ÀÇ ºóµµ¸¦ ºÐ¼®ÇÑ °á°ú µ¿Á¾ ¼öÇ÷À» ¹ÞÀº ȯÀÚ¿¡¼­´Â 20.8%, ÀÚ°¡ ¼öÇ÷À» ¹ÞÀº ȯÀÚ¿¡¼­´Â 3.5%·Î½á µ¿Á¾ ¼öÇ÷À”
21 Fernandez, 22 Sauaia, 23 Brunson, 21 Triulzi, 5 Fernandez, 21 Sauaia, 5 Brunson. 11, 13, 17, 24
ÀÚ°¡ ¼öÇ÷±º ¹× µ¿Á¾ ¼öÇ÷±º ¸ðµÎ¿¡¼­ °¨¿°°ú °ü·ÃÀÌ ¾ø´Â ¼ú ÈÄ ¹ß¿­Àº ºñ½ÁÇÑ
ºóµµ·Î ¹ß»ýÇÏ¿´À¸³ª, ¹ß¿­ ±â°£Àº µ¿Á¾ ¼öÇ÷±º¿¡¼­ Áõ°¡ÇÏ¿´´Ù. ¼öÇ÷°ú °ü·ÃµÈ ¼ú
ÈÄ ¹ß¿­¿¡´Â ºñ¿ëÇ÷¼º ¹ß¿­ ¹ÝÀÀ(febrile nonhemolytic transfusion reaction)ÀÌ
ÈçÇÏ¸ç ¶Ñ·ÇÇÑ ¹ß¿­ ¿øÀÎÀÌ ¾øÀÌ ¼öÇ÷ÀÌ ½ÃÀÛµÈ Á÷ ÈÄ ¶Ç´Â ¼öÇ÷ Á¾·á ÈÄ ¹ß»ýÇÏ¿©
10½Ã°£ Á¤µµ Áö¼ÓµÇ´Ù°¡ ÀÚ¿¬ ¼Ò½ÇµÈ´Ù.

25 Murphy µî 3 Àº ÀÚ°¡ ¼öÇ÷ÀÌ µ¿Á¾ ¼öÇ÷À»
°¢°¢ ½ÃÇà ÈÄ °¨¿°°ú °ü·ÃÀÌ ¾ø´Â ¼ú ÈÄ ¹ß¿­À» Á¶»çÇÑ °á°ú ¼ú ÈÄ ¹ß¿­ ±â°£ÀÌ µ¿Á¾ ¼öÇ÷±º¿¡¼­
°ÍÀ¸·Î »ç·áµÈ´Ù.

¼ö¼ú ÈÄ ÀÓ»óÀû Áõ»óÀÇ È£Àü Á¤µµ¿¡¼­ Åë°èÇÐÀû Â÷À̰¡ ¾ø¾ú´Ù. ÀϹÝÀûÀ¸·Î ôÃß
¼ö¼ú ÈÄ ÀÓ»óÀû Áõ»óÀº ¼ö¼ú Àü º¸Çà ´É·ÂÀÌ À¯ÁöµÇ°Å³ª, ½ÉÇ÷°ü Áúȯ µîÀÇ µ¿¹Ý
Àü¿¡ ºñÇÏ¿© Å©°Ô Áõ°¡ÇÒ ¶§ È£ÀüµÈ´Ù°í º¸°íµÇ°í ÀÖ´Ù.

26,27 ¿¬±¸¿¡¼­µµ ÀÚ°¡ ¼öÇ÷ÀÌ µ¿Á¾ ¼öÇ÷º¸´Ù
½ÉÇ÷°ü°è ±â´ÉÀ» È£Àü½ÃŰ°Å³ª º¸Çà´É·ÂÀ» Çâ»ó½ÃŰÁö ¾Ê±â ¶§¹®¿¡ ÀÓ»ó Áõ»óÀÇ
È£Àü¿¡¼­ Åë°èÇÐÀû Â÷À̰¡ ¾ø¾ú´Ù. ±×·¯³ª, ¼öÇ÷ óġ¿¡ ´ëÇÑ ¸¸Á·µµ´Â
ÀÚ°¡¼öÇ÷±º¿¡¼­ 2 3 ¸í(76.7%)ÀÌ ¸¸Á·ÇÔÀ» Ç¥½ÃÇѵ¥ ºñÇØ µ¿Á¾¼öÇ÷±ºÀº
4 ¸í(12.6%)¸¸ÀÌ ¸¸Á·ÇÏ´Ù°í ÇÏ¿© ´ëºÎºÐÀÇ µ¿Á¾ ¼öÇ÷ÀÚ´Â ¼öÇ÷¿¡ ´ëÇÑ ºÒ¾È°¨À»
³ªÅ¸³»¾ú´Ù.

½Å°æ¼º ÆÄÇà¿¡ ÀÇÇÑ ÇÏÁö ¹æ»çÅë¿¡ ÀÇÇÏ¿© º¸Çà Àå¾Ö°¡ Àִ ȯÀÚ¿¡¼­ ôÃß
¼ö¼úÀº °¨¾Ð¼ú¿¡ ÀÇÇÏ¿© ÅëÁõÀ» °¨¼Ò½ÃÄѼ­ ȯÀÚ¸¦ Á¤»óÀûÀÎ »ýȰ·Î º¹±Í½ÃŲ´Ù.
V.

[Text content in Vietnamese]


1986;121:50-5.


Abstract

Comparison of autologous transfusion with homologous transfusion in spinal arthrodesis: Postoperative infection and clinical results

Moon-Soo Park

Department of Medicine

The Graduate School, Yonsei University

(Directed by Professor Hui Wan Park)

Autologous transfusion has been suspected to overcome the adverse effects of homologous transfusion, such as transmissions of infection. Clinical studies have been designed to examine the relationship between autologous and homologous transfusion and postoperative results in those undergoing general orthopaedic surgeries and total hip arthroplasties. But, few studies have been designed to examine the relationship between autologous and homologous transfusion and postoperative infection, specially in those undergoing spinal fusion which has longer duration of operative procedure and larger amount of blood loss. The purpose is to determine whether there is a relationship between autologous and homologous transfusion and postoperative infection and clinical results of spinal fusion.

We reviewed the medical records of all patients who underwent instrumented spinal fusion with autogenous bone graft and received transfusion between January 1999 and December 2000. In 30 procedures patients received autologous blood only, in 32 procedures patients received homologous blood only. We
collected information on the patient’s gender, age, hemoglobin, hematocrit, platelet count at preoperative and postoperative 3rd day, segmental time in surgery, segmental estimated blood loss, segmental transfused units, total transfused units and duration of antibiotic therapy. We also collected information on the postoperative infections including wound infection, pneumonia, urinary tract infection, cellulitis, and viral transmitted disease and incidence and duration of fever. We also collected information on the improvement of postoperative clinical results, fusion rates and satisfaction with the transfusion. Statistical analysis was performed with software of SPSS 10 and p values that were less than 0.05 were considered significant.

Our autologous and homologous recipients were similar to each other in measures such as gender, age, hematologic features, segmental time in surgery, segmental estimated blood loss, segmental transfused units and duration of antibiotic therapy. Homologous transfusion was associated with increased total number of units transfused. There are a significantly increased number of total units transfused in homologous transfused group. No differences were found in the postoperative infection, incidence of fever, but homologous transfusion was associated with longer duration of fever. No differences were found in the improvement of postoperative clinical results, fusion rates, but autologous transfusion was associated with increased satisfaction with the transfusion.

Our finding suggested that autologous transfusion dose not result in decreased incidence of postoperative infection. But, the use of autologous blood transfusions may enhance the recovery to the activity of daily living by increasing satisfaction for the transfusion due to decreased number of total units transfused and
decreased duration of postoperative fever.

Key words: Spinal fusion, Autologous transfusion, Clinical results, Postoperative infection