**Ultrasound-assisted versus landmark-guided paramedian spinal anaesthesia in elderly patients: a randomised controlled trial**

Sun-Kyung Park1, Seokha Yoo1, Won Ho Kim1, Young-Jin Lim1, Jae-Hyon Bahk1, Jin-Tae Kim1\*

1Department of Anesthesiology and Pain Medicine, Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea

**List of Supplemental Digital Content**

**Supplemental Video S1**. The ultrasound-assisted paramedian needle insertion.

**Supplemental Table S1**. Analysis of number of needle passes and attempts by anaesthesiologists who performed spinal anaesthesia.

**Supplemental Table S2**. Complications of the procedure

**Supplemental Table S3**. Distribution of ease of landmark palpation in the landmark group and quality of ultrasound views in the ultrasound group.

**Supplemental Table S1**. Analysis of number of needle passes and number of attempts by anaesthesiologists who performed spinal anaesthesia.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Anaesthesiologist A (n=26) | Anaesthesiologist B (n=28) | Anaesthesiologist C (n=26) | *P* valuea |
| Number of passes | 2.5 [1.0 to 7.0] | 2.0 [1.0 to 5.0] | 1.5 [1.0 to 4.25] | 0.461 |
| Number of attempts | 1.0 [1.0 to 3.0] | 1.0 [1.0 to 1.75] | 1.0 [1.0 to 2.0] | 0.275 |

Data are presented as median [interquartile range].

a Kruskal–Wallis test

**Supplemental Table S2**. Complications of the procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Landmark group (n=40) | Ultrasound group (n=40) | Relative Risk (95% CI) | *P* valuea |
| Radicular pain | 1 (2.5) | 2 (5.0) | 1.351 (0.588 to 3.103) | >0.999 |
| Paresthesia | 1 (2.5) | 0 (0) | - | >0.999 |
| Bloody tap | 1 (2.5) | 1 (2.5) | 1.000 (0.246 to 4.070) | >0.999 |
| Conversion to midline approach | 1 (2.5) | 0 (0) | - | >0.999 |
| Conversion to alternative technique | 4 (10.0) | 0 (0) | - | 0.116 |
| Failure to perform spinal anaesthesia | 0 | 0 | - | - |
| Conversion to general anaesthesia | 0 | 0 | - | - |

Data are presented as *n* (%).

CI, confidence interval.

a Fisher’s exact test.

**Supplemental Table S3**. Distribution of ease of landmark palpation in landmark group and quality of ultrasound views in ultrasound group

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Landmark group (n=40) | Ultrasound group (n=40) |
| Ease of landmark palpation | Grade 1 (Easy) | 19 (47.5) |  |
|  | Grade 2 (Moderate) | 12 (30.0) |  |
|  | Grade 3 (Difficult) | 9 (22.5) |  |
|  | Grade 4 (Impossible) | 0 (0) |  |
| Quality of ultrasound views |  |  |  |
| PSO view | Grade 1 (Good) |  | 30 (75)  |
|  | Grade 2 (Intermediate) |  | 10 (25) |
|  | Grade 3 (Poor) |  | 0 (0) |
| TM view | Grade 1 (Good) |  | 9 (22.5) |
|  | Grade 2 (Intermediate) |  | 23 (57.5) |
|  | Grade 3 (Poor) |  | 8 (20) |

Data are presented as *n* (%).