

Background and aims

Traumatic amputations are a devastating cause of disability. Functional tests should be included in the clinical evaluation of the lower limb amputee, these facilitate decisions by classifying levels of functionality. This work aims to describe the clinical, prosthetic, and functional characteristics of a group of war veterans amputated by landmines in Colombia, and the correlation with their functional class.

Methods

15 lower limb amputees were included who attended the delivery of the definitive prosthesis and agreed to participate; clinical characteristics and functional performance through different tests Up&Go test (U&G), L-test, Functional Reach Test (FRT), Unipodal stance test (UST), Houghton scale (HS), Barthel index (BI), 6-minute walk test (6MWT)) were recorded (Tables 1,2). Statistical analysis was performed in the SPSS v.24 program, Spearman's correlation coefficient was used given the non-parametric distribution of the data.

TABLE 1: TEST RESULTS 6MWT

| Patient | K Functional level | Distance mt | WS m/s | DP | PCI | BMI | HS |
|---------|--------------------|-------------|--------|----------|-----|-------|-------|
| 1 | 3 | 423.00 | 1.18 | 10200.00 | .13 | 25.25 | 10.00 |
| 2 | 2 | 296.00 | .82 | 9324.00 | .03 | 27.01 | 6.00 |
| 3 | 3 | 420.00 | 1.17 | 9672.00 | .03 | 26.45 | 11.00 |
| 4 | 3 | 256.00 | .71 | 11160.00 | .05 | 28.58 | 11.00 |
| 5 | 3 | 480.00 | 1.33 | 15120.00 | .10 | 23.04 | 10.00 |
| 6 | 3 | 440.00 | 1.22 | 9204.00 | .03 | 29.32 | 11.00 |
| 7 | 3 | 465.00 | 1.29 | 10248.00 | .05 | 27.18 | 10.00 |
| 8 | 3 | 420.00 | 1.17 | 15840.00 | .09 | 24.02 | 10.00 |
| 9 | 4 | 530.00 | 1.47 | 12500.00 | .11 | 25.25 | 12.00 |
| 10 | 3 | 425.00 | 1.18 | 11328.00 | .09 | 27.66 | 11.00 |
| 11 | 3 | 406.00 | 1.12 | 7260.00 | .03 | 23.88 | 10.00 |
| 12 | 3 | 343.00 | .95 | 15048.00 | .14 | 29.36 | 11.00 |
| 13 | 3 | 345.00 | .96 | 10368.00 | .10 | 21.89 | 10.00 |
| 14 | 3 | 250.00 | .69 | 8736.00 | .05 | 29.07 | 10.00 |
| 15 | 3 | 448.00 | 1.24 | 15876.00 | .11 | 33.26 | 11.00 |

WS: Walking speed
 DP: double product (Heart rate X Systolic blood pressure)
 PCI: physiological cost index
 BMI: Body Mass Index
 HS: Houghton scale

TABLE 2: Results of the L test, FRT, U&G, Unipodal stance test, HS, functional level K, Barthel Index

| Patient | L test (s) | FRT (cm) | U&G (s) | UST (s) | HS | Functional level K | Barthel Index |
|---------|------------|----------|---------|---------|-------|--------------------|---------------|
| 1 | 16.00 | 23.00 | 9.70 | 30.00 | 10.00 | 3 | 100.00 |
| 2 | 34.30 | 16.00 | 19.48 | 30.00 | 6.00 | 2 | 100.00 |
| 3 | 19.99 | 17.30 | 10.10 | 30.00 | 11.00 | 3 | 100.00 |
| 4 | 19.04 | 12.20 | 11.51 | 30.00 | 11.00 | 3 | 100.00 |
| 5 | 18.70 | 17.50 | 8.35 | 30.00 | 10.00 | 3 | 100.00 |
| 6 | 21.18 | 33.00 | 10.61 | 30.00 | 11.00 | 3 | 100.00 |
| 7 | 19.43 | 15.00 | 9.49 | 30.00 | 10.00 | 3 | 100.00 |
| 8 | 20.51 | 15.20 | 11.73 | 30.00 | 10.00 | 3 | 100.00 |
| 9 | 15.50 | 28.00 | | 6.00 | 12.00 | 4 | 100.00 |
| 10 | 17.61 | 20.00 | 7.42 | 30.00 | 11.00 | 3 | 100.00 |
| 11 | 18.70 | 25.00 | 11.63 | 30.00 | 10.00 | 3 | 100.00 |
| 12 | 26.90 | 21.00 | 13.20 | 30.00 | 11.00 | 3 | 100.00 |
| 13 | 25.70 | 21.70 | 12.77 | .00 | 10.00 | 3 | 100.00 |
| 14 | 21.90 | 23.00 | 10.26 | 30.00 | 10.00 | 3 | 100.00 |
| 15 | 16.31 | 34.00 | 8.96 | 30.00 | 11.00 | 3 | 100.00 |

FRT: functional reach test
 U&G: Up and Go test
 UST: Unipodal stance test
 HS: Hughton scale

Results

Moderate correlation was found between level of amputation and the U&G test ($r=0.592$ $p<0.05$), moderate correlation was found between the functional level K (FLK) and the U&G test ($r=0.592$ $p<0.05$), FLK and L Test have moderate correlation ($r=0.681$ $p<0.01$). The U&G test showed strong correlation with the L Test on the first attempt ($r=0.682$ $p<0.01$), second attempt ($r=0.789$ $p<0.01$), and third attempt ($r=0.826$ $p<0.01$). The speed gait has strong correlation with the U&G ($r=0.7$ $p<0.01$).

Conclusions

The patient's characteristics amputated by landmine highlighted the importance of functional evaluation in all patients. We suggest the use of the 6MWT, U&G Test, L Test, and the HS as indispensable measures in the evaluation of the lower limb amputee. The BI is a measure that doesn't predict outcomes and classify functionality levels in amputees.

- References**
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