

FUNCTIONAL OUTCOMES AFTER PROSTHETIC REHABILITATION IN ABOVE AND THROUGH KNEE AMPUTATION IN CANCER PATIENTS

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BACKGROUND

Amputation for cancer treatment is generally performed for advanced diseases. Primary cancers of the extremities are more frequent in the lower limbs. In an effort to achieve the cure, above knee amputations are generally indicated. Hip disarticulation is generally associated worst functional outcome compared to through knee disarticulation and transfemoral amputation. Little is known about the impact of the prosthetic rehabilitation on functional outcome in amputee survivors for cancer treatment.^{1,2,3,4}

AIM

To investigate functional outcomes after prosthetic rehabilitation in above and through knee amputation for cancer patients.

METHOD

Descriptive study of patients diagnosed with cancer at the lower limbs, at age of 18 years or older, after at least one year of prosthetic rehabilitation between January 2010 and December 2014, treated in the National Institute of Cancer José Alencar Gomes da Silva, Rio de Janeiro, Brazil. The Functional Measure for Amputees questionnaire was applied to access self related functionality. Demographic, clinical and rehabilitation data was reviewed from the patients reports. Statistical analysis was performed by descriptive measures (StataCorp 2011, *Stata Statistical Software: Release 12*. College Station, TX: StataCorp). Approval from the Institute's Ethic Committee was taken under the number 730.513.

RESULTS

From 126 selections, thirty patients answered the questionnaire. Thirty deaths, 29 non-answers and 37 not found people were considered as lost. The results of the demographic, clinical and rehabilitation data are shown in table 1. Twenty seven patients (90%) answered that they use a prosthesis. Three patients (10%) answered not to use the prosthesis for the following reasons: one transfemoral patient due to weight gain and two hip disarticulations patients due to fitting problems associated with social difficulties in accessing the institute and the other because the physician told her she was not a candidate to use it.

DISCUSSION & CONCLUSION

To date, the results confirm that prosthetic users had osteosarcoma as the principal cancer diagnosis¹. In general patients are able to put the prosthesis on independently but still depend on crutches especially for outdoors walkings³. Few patients of hip disarticulation had high functional outcomes.⁴ Two important limitations were the selection bias, as patients that don't use the prosthesis could not be interested in participate, and the small population that are relatively common in lower limb cancer, due especially to poor survival. Although cancer is an aggressive disease it could be expected good functional outcomes in prosthetic rehabilitation for longer survivors.

Table 1- Demographic, clinical and rehabilitation data by amputation level.

	Transfemoral	Knee disarticulation	Hip disarticulation
N (%)	16 (53.3%)	4 (13.3%)	10 (33.3%)
Patients			
Male	12 (75%)	2 (50%)	6 (60%)
Female	4 (25%)	2 (50%)	4 (40%)
Age			
Mean, range, sd; years	42 (18-92) 5.7sd	66 (60-73) 6.95sd	41 (20-85) 7.1sd
Pathohistological diagnosis			
Squamous cell carcinoma	4 (25%)	4 (100%)	1 (10%)
Osteosarcoma	9 (56.2%)	-	8 (80%)
Chondrosarcoma	2 (12.5%)	-	-
Soft tissue sarcoma	1 (6.2%)	-	1 (10%)
Metastasis at diagnosis			
Yes	4 (25%)	-	1 (10%)
No	12 (75%)	4 (100%)	9 (90%)
Phantom limb			
Yes	11 (68.7%)	3 (75%)	5 (50%)
No	5 (31.3%)	-	4 (40%)
Missing information	-	1 (25%)	1 (10%)
Admission at rehabilitation			
Mean, range, sd; months	1,93 (1-2) 0,25 sd	2 (2-2) 0 sd	12 (3-32) 11,3 sd
Prosthetic rehabilitation follow-up			
Mean, range, sd; months	5.1 (3-8) 0.5 sd	3.73 (3-6) 0.7 sd	11.3 (3-32) 3.5 sd
Prosthetic users, n (%)	15 (94%)	4 (100%)	8 (80%)
Ability to put on			
Independently	16 (100%)	4 (100%)	7 (87,5%)
With help	-	-	1 (12,5%)
Walking aids - indoors			
Independently	12 (75%)	2 (50%)	2 (20%)
With one or two crutches	4 (25%)	2 (50%)	8 (80%)
Walking aids - outdoors			
Independently	8 (50%)	-	1 (10%)
With one or two crutches	8 (50%)	4 (100%)	6 (90%)
Walking distance			
As far as desired	9 (56.2%)	2 (50%)	4 (40%)
Nearly 100 steps non stop	5 (31.2%)	1 (25%)	2 (20%)
30-100 steps non stop	1 (6.2%)	-	-
10 - 30 steps non stop	-	1 (25%)	2 (20%)
Cannot walk with it	1 (6.2%)	-	2 (20%)
Use - hours per day			
Mean, range, sd	13 (6-24) 1.5 sd	9.25(4-14) 2.0 sd	8.3 (0-24) 8.1 sd
Use - days per week			
Mean, range, sd	6 (0-7) 1.8 sd	7 (7-7) ,000sd	4 (0-7) 2.6 sd

REFERENCES

1. Furtado, S et al; 2015; Bone Joint J 97-B: 1284-90.
2. Kralovec, ME et al; 2015; Am J Phys Med Rehabil 94:1035-1040.
3. Kauzlaric, N et al; 2007; Eur J Cancer Care 16,238-243.
4. Jain, R et al; 2005; EJSO 31,1025-1028.
5. Kageyama, ERO et al; 2008; Fisioter Pesq 15:164-71