



OUTCOME ANALYSIS IN LOWER LIMB POST TRAUMATIC AMPUTATIONS- A FOLLOW UP STUDY

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ABSTRACT

Introduction- Amputation surgery can be change life. Its surgery used to control pain and disease process in the affected limb. Amputation is the most common obtain disorder. Up to age of 55 years, trauma and malignancy remains the great causes of amputation. Amputations following trauma declining in developed countries. Lower extremity amputation (LEA) cause serious physical disability and it is intuitive that adjustment to the conditions of amputation is impulsive to psychological distress. **Material and methods-** All trauma patients with zero delay were resuscitated under ATLS protocol. Patient vitals which involve pulse, blood pressure, respiratory rate and oxygen saturation are recorded and two large-bore cannulae are inserted and venous sample for blood grouping and typing, cross match, complete blood count, and viral markers Hbsag, HIV, HCV were sent. Primary survey includes assessment of Airway, Breathing and ventilation, Circulation with Hemorrhage control, Exposure **Result and analysis-** Quality of life measured by SF12 score revealed significant lowering of physical component score (PCS) of below knee amputees (43.84) compared to that of above knees (38.47) amputees. Mental component score (MCS) revealed a lower score of above knee amputees (39.43) compared to that of above knee amputees **Conclusion-** below knee amputees had better quality of life and successful rehabilitation of an amputee on a prosthesis depends on stump quality, maintaining ideal stump length is not much important in rehabilitation of an amputee.

KEYWORDS : Amputation, Prosthesis, Rehabilitation

INTRODUCTION-

Amputation surgery can be change life. Its surgery used to control pain and disease process in the affected limb. Amputation is the most common obtain disorder.^[1] National Sample survey (NSS), 58th round 2002 estimated the generality of locomotors disability around 51%. Prevalence rates have shown declining trends during 1991-2002 for all types of disability except locomotors disorder.^[2] Up to age of 55 years, trauma and malignancy remains the great causes of amputation.

Amputations following trauma declining in developed countries. According to WHO, road accidents case is the highest in India. We loosed more young people In this case. In a study revealed that upper limb amputees reporting a best quality of life (compared to lower limb amputees) was primarily related to their feedback concern to "physical disability, pain, and energy level".^[1]

We find that people with a lower limb prosthesis incident greater reduction in community activities and difficulty in joining in community activities. Lower extremity amputation (LEA) cause serious physical disability and it is intuitive that adjustment to the conditions of amputation is impulsive to psychological distress. It was recommended that all amputees should be encouraged to undergo a well-structured rehabilitation program which includes physiotherapy, occupational therapy and vocational rehabilitation.

Material and Methods

All trauma patients with zero delay were resuscitated under ATLS protocol. Patient vitals which involve pulse, blood pressure, respiratory rate and oxygen saturation are recorded and two large-bore cannulae are inserted and venous sample for blood grouping and typing, cross match, complete blood count, and viral markers Hbsag, HIV, HCV were sent. Primary survey includes assessment of

A- Airway maintenance with cervical spine protection.

B- Breathing and ventilation

C- Circulation with Hemorrhage control

D- Disability (Neurological examination)

E- Exposure

In case of compound injuries, patients were prophylactically given Inj. Tetanus immunoglobulin 500 IU intramuscular stat dose Inj. Cefotaxime 1g iv and aminoglycoside 500 mg iv stat dose are administered. All compound injuries were classified under Gustilo-Anderson classification. 66 Gustilo-Anderson Grade IIIc compound fractures and mangled extremities with MESS score >7, after plastic surgeon opinion were taken up for amputation. If the wound was poor and remained unsatisfactory after repeated debridement after attaining plastic and vascular opinion, amputations was performed.

RESULT AND DISCUSSION

The average age of patients was 44.08 years in our study with range from 12 to 80 whereas Walker reported 30 years as average^[5]. This can probably be ascribed to the fact, that a tertiary care Centre attracts elderly patients, as they have more comorbidities and are prone to more complications compared to the rest of the general population. There was male preponderance in our study with 33:7, male and female ratio (82.5%). Dillingham et al reported male dominance with 82%. Pezzin et al reported similar results of 86% with male preponderance. This reflects the pattern of trauma, with males more commonly affected than females in Indian population. The most common mode of injury was road traffic accident with 87.5% followed by train traffic accident of 12.5%. Ghosh et al 70% of amputations were accounted due to trauma. The number of above knee to below knee amputees was 23:17. Walker et al reported 40 below knee amputees 24 above knee and 7 cases of bilateral amputees. Pezzin et al reported 23 below knee to 10 above knee amputee cases. Stump pain was experienced by 7 out of 40 patients^[6]. 10% of below knee amputees and 20% of above knee amputees experienced stump pain. Walker et al reported 40% of below knee amputees and 46% of above knee amputees had stump pain. In a meta-analysis by Penn-barwell 52% of below knee amputees and 58% above knee amputees experienced

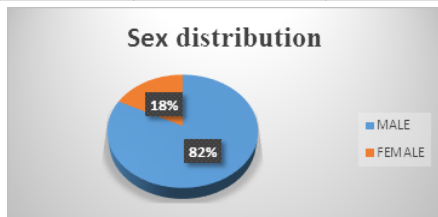
painful symptoms associated with stump. 91 Phantom pain was experienced by 19 out of 40 patients. 47% of Below knee and 44% of above knee amputees experienced phantom pain. Walker et al reported 65% below knee and 73% above knee amputees had phantom pain. Pezzin et al reported 22% below knee and 12% above knee amputees experienced phantom pain.^[6] 92% of below knee and 70% of above knee amputees had a mobility of more than 450 metres. Walker et al reported 36% below knee and 46% above knee amputees had mobility of more than 500 metres Walker et al reported 4.2% of below knee and above knee amputees wear prosthesis less than 4 hours a day. In Penn-barwell meta-analysis, patients with below knee amputees wore prosthesis significantly more than above knee amputees. In our study it was found that the failure in compliance of 9 (22.025%) patients to wear prosthesis for less than 4 hours was found to correlate with those patients who failed to avail the pre-prosthetic gait training from the hospital due to various social economic barriers whereas remaining 22 (55%) patients availed either in-patient or out-patient gait training before prosthesis fitting.

In this study, the mean stump length in above knee amputees is 24.2 cm & below knee amputees is 20.35 cm. Brian S. Baum et al in his study on transfemoral amputees, concluded that preservation of stump length may not be as important as other factors such as performance of myodesis, type of prosthesis and rehabilitation^[3,7]. Koyel Majumdar et al in his study divided below knee amputees into three groups with long, medium and short stump. He concluded that patients with longer stump had more velocity and less energy expenditure compared to short stump length^[4]. In our study, although our stump length didn't correlate with ideal stump length values, 85% below and 45.45% above knee amputees use prosthesis more than 4 hrs and mobility of 500 metres, which implies that ideal stump length is less important than quality of stump, prosthesis and rehabilitation. Quality of life measured by SF12 score revealed significant lowering of physical component score (PCS) of below knee amputees (43.84) compared to that of above knees (38.47) amputees. Similarly, mental component score (MCS) revealed a lower score of above knee amputees (39.43) compared to that of above knee amputees (43.91). Meta-analysis revealed significant lowering of PCS as the amputation level becomes more proximal^[5].

In our study Male patients were predominant. Out of 40 patients only 7 patients (17%) are female patients.

(1) Sex No of patients Percentage

Sex	No. of patients	Percentage
Male	33	82%
Female	7	17%



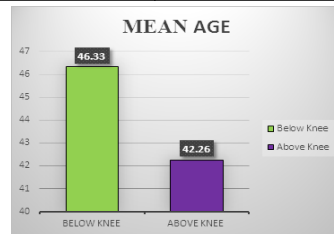
(2) Mode of Injury

Mode of injury	No of patients	Percentage
RTA	35	87.5%
TTA	5	12.5%

Road traffic accidents accounted for amputation in 35 patients (87.5%) followed by train traffic accidents in 5 (12.5%) patients.

(3) Mean Vs Type of Amputation

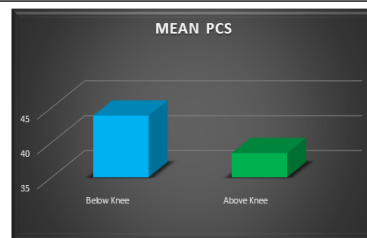
Type of Amputation	Age (In Years)	
	MEAN	SD
	Below Knee	46.33
Above Knee	42.26	18.4



There is not much significant difference in mean age between below knee and above knee amputation group.

(4) Physical Component Score

Type of Amputation	Physical Component Score	
	MEAN	SD
Below Knee	43.84	7.2
Above Knee	38.47	8.07
P VALUE - 0.025		
SIGNIFICANT		
UNPAIRED T TEST		



There is significant difference in Physical Component Score with below knee amputation patient had better score than above knee patients, which is also statistically

significant with an P value of 0.025.

Conclusion-

It was observed that below knee amputees had better quality of life and successful rehabilitation of an amputee on a prosthesis depends on stump quality, maintaining ideal stump length is not much important in rehabilitation of an amputee. Developing awareness programme like pre-prosthetic gait training exercises, early prosthetic fitting helps to improve the prosthesis use, quality of health and vocational prospects. Medical rehabilitation along with psychosocial rehabilitation by an interdisciplinary, well co-ordinated team of physiotherapist, occupational therapist, nurse, psychologist and social worker helps to attain the ultimate goal of successful re-integration of an amputee to the level of pre-amputation daily living.

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