

**Psychological Impact of Traumatic Limb Amputation in the Moroccan Context**

F. Saoudi\*, A Lagdid, RA Bassir, M Boufettal, A. Albardouni, M Kharmaz, MO Lamrani, M Ouadghiri, M Mahfoud, MS Berrada

Department of Orthopedic Surgery and Traumatology, Ibn Sina UHC, Mohamed V University, Rabat, Morocco

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F. Saoudi

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**Abstract:** Amputation of a limb affects almost every aspect of an individual's life. The psychological state of amputees is an obstacle to progress towards autonomy and socio-professional reintegration. This is a prospective study of 18 patients who were admitted to the trauma surgery department of Ibn Sina University Hospital in Rabat for traumatic limb amputation. Psychological assessment of our patients was done during hospitalization and rehabilitation at 3, 6 and 12 months using the Hospital Anxiety and Depression Scale (HADS). Data was analyzed using SPSS. The average age of the patients was 29 years, of whom 3 were female (17%). Half of the patients were married. Traffic accidents accounted for 83% of the cases and 17% of work accidents. Amputation of the lower limb was performed in 82% of cases. 57% of amputations were performed on the day of the trauma. The average HADS in our patients was 23.6 at admission and then we found a decrease at 17.3 at 3 months, 13.3 at 6 months; 12.1 to one year, with no variation between the lower extremity amputees and the upper limb. We emphasize the importance of psychological management of amputees upon admission to emergency department in Moroccan context to facilitate adaptation to the new situation and the socio-professional integration.

**Keywords:** Amputation, limb, psychology.

**INTRODUCTION**

Amputation of a limb affects almost every aspect of an individual's life. The psychological aspect is very affected especially when it is a traumatic amputation which occurs in a previously healthy individual [1-2].

The absence of psychological management in the acute phase allows developing in the long term more severe psychological disorders.

This study was carried out on 18 patients admitted to the trauma surgery department. We evaluated the psychological impact of limb amputation since admission and for 12 months of follow-up.

**MATERIALS**

This is a prospective study of 18 patients who were admitted to the orthopedic and trauma surgery department of Ibn Sina University Hospital in Rabat for traumatic limb amputation between January 2015 and December 2016.

**Exclusion criteria**

- Patients lost to follow-up.
- Deceased patients.
- Amputation of fingers and toes.
- Nontraumatic limb amputation.

**METHODS**

The psychological assessment of our patients was done during hospitalization and rehabilitation at 3, 6

and 12 months using the Hospital Anxiety and Depression Scale (HADS).

The HADS consists of 14 items that are divided into two subscales: 7 items to assess depression and 7 items to assess anxiety. For each item, four response modes coded from 0 to 3. An overall score is calculated by summing the responses to the 14 items (varies from 0 to 42). The higher the scores, the more severe the symptomatology.

The thresholds for identifying cases with depressive or anxiety symptoms are as follows:

- From 0 to 14: no anxio-depressive disorders.
- From 15 to 42: existence of anxio-depressive disorders.

The data was set up on log files and then processed by Microsoft Excel and analyzed using SPSS

**RESULTS**

Among 59 amputations performed in our department, 35 were of traumatic origin and only 18 were included in our study.

The average age of the patients was 29 years (19 to 54), of whom 3 were female (17%). Half of the patients were married. 61% of patients were from urban areas, traffic accidents accounted for 83% of the cases and 17% of work accidents.

Amputation of the lower limb was performed in 81% of cases, percentages of limb amputation levels are shown in figure 1 [fig 1].

Postoperative complications were present in 5 cases (28%), 3 cases required a resumption of amputation [Fig 2].

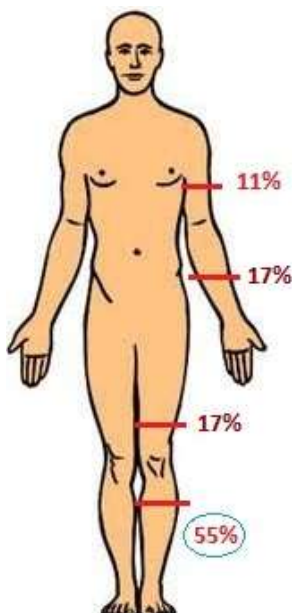


Fig-1: Percentage of limb amputation levels



Fig-2: Serious injury of the forearm affecting the bones and soft tissues, on the right: necrosis of the hand occurred 3 days after the trauma

55% of the amputations were performed on the day of the trauma, the others cases were complicated in

the following days with tissue necrosis that required amputation [fig 3].

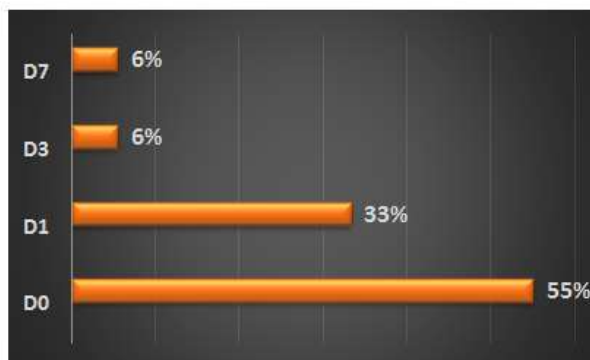


Fig-3: delay of surgical amputation after trauma

The average HADS in our patients was 23.6 at admission and then we found a decrease at 17.3 at 3 months, 13.3 at 6 months; 12.1 at 12 months, with no

variation between the lower extremity amputees and the upper limb.

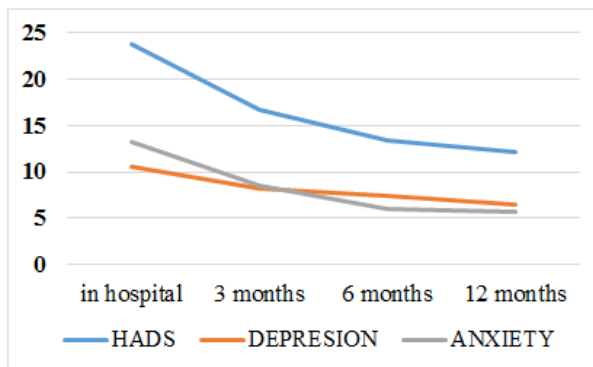


Fig-4: Evolution of the average of the HADS as well as the sub-scores (anxiety and depression)

## DISCUSSION

The traumatic amputation of a limb is experienced as a human tragedy. It painfully affects the patient in its physical, psychological and social integrity; it does not spare more the surgeon and the nurse team even more if the subject is young.

The adaptation to the new situation depends on the age of the patient and the quality of the psychological support used to help the patient adapt to the new life, the adaptation is difficult in elderly patients which is contrary to young patients. Time is an important factor in accepting the loss of a limb [3].

The amputee must face three bereavements: that of a part of his body: related to the resection of his limb, that of his body image: related to the loss of a part of his body that makes that he must live daily with his new body and that of certain disabilities of his body; loses some potentialities [4].

Grief in limb amputee evolves in 6 stages, described by Elisabeth KÜBLER ROSS and cited by MIGNOT H. they are shock, denial, anger, bargaining, depression and grief resolution [5-6].

HADS allows an assessment of depressive and anxious symptomatology, by eliminating somatic symptoms that may skew the evaluation [7]. The findings shows a considerable decrease in the average of the HADS between admission and 3 months of evolution, this decrease can be explained by post-traumatic psychological shock. Then we noticed a longer process of adaptation to daily life in our context which results in a slight decrease in the mean of the HADS during the 9 following months in relation to the absence of a psychosocial intervention with these limb amputees. [Fig. 4]

Decreased self-esteem and distorted body image are few of the many reasons for the development of psychological mal-adaptation. In first year 25%

amputees suffer from depression, feeling of insecurity, self-consciousness and restlessness [8].

The absence of the psychological intervention is a predictor of the evolution towards anxiety and depression comparing to the data of the literature [9]. Hence increasing self-sufficiency by psychological intervention helps in ameliorating the distress [10]. Psychological problems may result from a failed adaptation process to the loss [11].

The rehabilitation and management of the phantom limb pain must be associated with the psychological support. Preoperative epidural blockade with bupivacaine and morphine reduces the incidence of phantom limb pain in the first year after operation [12-13]. The rehabilitation of different limb levels of amputation have greatly benefited from the technological advance that have impacted the functional outcomes of patients with limb amputation [14].

## CONCLUSION

The experience of a patient with a limb amputated is marked by a state of stress that often progresses to anxiety and depression. This condition is an obstacle to progress towards autonomy, so intervention of health professionals is necessary and we hope that our study will contribute in the psychological and social care measures of patients in our context in order to alleviate or neutralize psycho-affective problems related to amputation.

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