AMPUTATION-RELATED BACK PAIN: PREVALENCE, ASSOCIATED RISK FACTORS AND CORRELATION WITH FUNCTIONAL DISABILITY

AMAL BAKRY AHMAD ABDUL-SATTAR

Rheumatology & Rehabilitation Department, Zagazig University Faculty of Medicine

KEY WORDS: LOWER LIMB AMPUTATION, BACK PAIN, PREVALENCE, RISK FACTORS, FUNCTIONAL DISABILITY

ABSTRACT

Objective: *To determine the prevalence and associated risk factors for post-amputation back pain in lower limb amputees, and to evaluate post amputation back pain-related functional disability.*

Methodology: *Nested case control study included fifty three lower limb amputees who were more than one year post amputation and ambulatory with prosthesis. All studied lower limb amputees were underwent full history taking, measurement of intensity, frequency and duration of post amputation back pain and measurement of post amputation back pain – related functional disability by using of the revised Oswestry low back pain disability questionnaire (RODQ).*

Results: *The prevalence of the reported back pain by the studied sample of the lower limb amputees was 64%. The mean of back pain intensity was 5.6± 2.4. The majority of these with post amputation back pain (62%) described their back pain as intermittent and 38% described their back pain as constant. More than twenty three percent of lower limb amputees reported their average back pain intensity as mild (1-4), 50% reported their average back pain as moderate (5 or 6), and 26.5% reported their average back pain as severe (7-10). As age increased, the odds of development of back pain increased. The prevalence of back pain in men was more than in women (OR =1.8, 95% CI = 1.2-2.3). The odds of development of back pain*

in lower limb amputees who resided in an urban areas was higher than that in who resided in rural area (OR =3.8, 95% CI = 2.9 – 4.6).

The odds of development of back pain was higher in lower limb amputees with low education level than in those with high education level (OR = 2.6; 95% CI =1.6-2.9). Diabetes mellitus as a reason of lower limb amputation associated with the highest risk of development of back pain in lower limb amputees (OR=3.4; 95% CI=2.9-5.1). The transfemoral amputation associated with a higher risk of development of back pain than the transtibial amputation (OR=3.6; 95% CI=2.1-4.2). As the time since amputation increased the risk of development of back pain increased (OR of < 2years = 3.2; 95% CI 2.8 -3.6). The risk of development of back pain in lower limb amputees increased with increasing of duration of daily use of their prosthesis (OR of ≥ 5 hours use =4.4; 95% CI= 3.1- 5.3).

As the number of co morbidities increased, the risk of development of back pain increased (OR of one sephantom limb pain was associated with a high risk of development of back pain [OR =2.4; 95% CI= 1.9-3], Also, presence of residual limb pain increased the risk of development of back pain in lower limb amputees (OR=2.6; 95% CI=1.7-3.2). However, pain in non amputated limb was not associated with odds of development of back pain (OR=0.8; 95% CI=0.3-1.3). A significant difference was found between the functional disability in lower limb amputees with post amputation back pain and those without back pain (t = 3.2, p< 0.05). A significant positive correlation was found between the degree of intensity of back pain in the lower limb amputees and the level of back pain – related functional disability (r = + 0.7, p< 0.5).

Conclusion: *the prevalence of back pain among the lower limb amputees is high. Identifying risk factors in this study helps to determine the characteristics of lower limb amputees toward whom to direct measures to prevent post amputation back pain. Measurement of back pain intensity is important to assess the back pain-related functional disability.*

INTRODUCTION

Low back pain (LBP) is a common condition, with 50% to 90% of the general population experiencing some degree of LBP during their lifetime *(Roach et al., 1997 and Nadler et al., 1998)*. In addition to amputation specific pain (phantom limb pain and residual limb pain), chronic pain in other parts of the body may contribute to disability in persons with limb loss, in particular, back pain has been reported to affect 52% to 89.6% of lower limb amputees *(Smith et al., 1999 and Kusljugic et al., 2006)*.

The persons with acquired amputation like persons with other disabilities, often report more than one site of troublesome pain *(Marshall et al., 2002)*. Causes of low back pain have been studied extensively and include musculoskeletal impairments, biomechanical abnormalities, gait deviations, primary medical causes, and deleterious or excessive activity *(Massie, 1999)*. Low back pain is usually found in persons with lower limb amputation (LLA), as the most common sign of somatisation or inappropriately made prosthesis *(Kusljugic et al., 2006)*.

Persons with lower limb amputations often develop gait patterns to accommodate a prosthesis that may put them at risk for back pain *(Perry, 1992)*. Lower limb amputees with chronic back pain have been shown to report significantly more disability than lower limb amputees without back pain *(Marshall et al., 1992)*. Low back pain was more strongly associated with interference of pain with activities in persons with acquired amputations than was phantom limb pain *(Jensen et al., 2001)*.

Chronic amputation related pain, including pain in the phantom limb, pain in residual limb, and back pain, impaired function of the lower limb amputees *(Marshall et al., 2002)*. With the increasing trend in the incidence of limb loss, there is a growing interest in the development of programs aimed at prevention of secondary conditions affecting those living with the loss of a limb *(Ephraim et al., 2005)*.

Aim of work:

To describe the prevalence of lower limb amputation –related back pain, to measure the back pain characteristics and to evaluate back pain – related functional disability.

MATERIALS AND METHODS

All persons with acquired unilateral transtibial or transfemoral amputation who were more than one year post amputation and ambulatory

with prosthesis which were made in orthotics and prosthetics department of the rehabilitation center of *Al Hada and Al Taif Military Hospitals* over period from April 2004 to April 2006 were evaluated for inclusion in this study. These amputees with inability to read and write Arabic, amputees with back pain before their amputations, and amputees with amputations at other levels were excluded. Of these, only 53 amputees satisfied the criteria for this study. Then all amputees were undergone the following:

1. Full history taking;

- Demographic characteristics: including age, sex, educational level, residency, marital status.

- Amputation characteristics: including medical reason for their amputations, level of their amputations and time since their amputations.

- Prosthesis characteristics: the amputees were asked whether they satisfied with using of their prosthesis and number of hours of daily use of their prosthesis.

- Co morbidity: number, type and time since onset.

- Pain characteristics: All amputees were asked whether they had back pain after their lower limb amputations. Then those mentioned the presence of back pain was asked about the pattern, frequency and duration of their back pain and if they have pain in other sites of their bodies.

2. Measurement of post amputation back pain intensity:

All lower limb amputees with post amputation back pain were educated how to use the visual analogue pain scale to rate their back intensity for one week. Then the average of intensity of back pain which were rated by the amputees were quantified and classified into 3 levels:

- Mild intensity (1-4).
- Moderate intensity (5 or 6).
- Severe intensity (7–10).

3. Measurement of post amputation back pain – related functional disability:

By using of the revised Oswestry low back pain disability questionnaire [RODQ] after education of the amputees how to use it to rate their functional disability. The RODQ is a 10 – items self report instrument that evaluate perceived disability in 10 areas: pain intensity, ability to lift objects, ability to work, ability to sit, ability to stand, ability to sleep, sex life, social life, traveling, and ability to complete personal hygiene activities. The items in each sections are scored from 0 to 5 (0= no limitations, 5=

severe limitations). Then they are totaled and converted to percentage of disability score. The higher scores indicating greater disability *(Hudson-Cook et al., 1989)*.

Statistical Analysis:

Analysis was done using SPSS program, V-10 under window. Descriptive statistics are presented as means with standard deviation (SD) for continuous variables as counts and percentage for qualitative data. Comparison was done using the student's "t" test. Correlation study was done using Pearson's correlation coefficient (r). Adjusted odds ratio (OR) for development of back pain in lower limb amputees were estimated with lower limb amputees without back pain as the base reference group. A lower limit of the 95% confidence interval (CI) that exceeded 1.0 was taken to indicate statistical significance in the case of positive association and an upper limit less than 1.0 in the case of negative association.

RESULTS

Demographic and amputation Characteristics of the studied sample of the lower limb amputees are presented in table (1). The age of amputees range from 18 to 72 years (mean ± SD, 45.3±11.2 year) and the age of the majority of the lower limb amputees (57%) were between 41 and 60 years. Seventy percent of the studied samples were males. The majority (64%) resided in urban areas. Seventy five percent reported minimum education (< 12^{th} grade). Diabetes mellitus was the most frequent (66%) reason for amputations. Seventy four percent of the amputations levels were transtibial. The time since amputations was less than 2 years in 53 % and more than or equal 2 years in 47%. Most of the amputees (79%) reported using their prosthesis for less than 5 hours daily. Seventy percent of the studied amputees had 2 or more co morbidities. The prevalence of the reported back pain in the studied sample of the lower limb amputees was 64%, the prevalence of the reported Phantom limb pain was 78%, the prevalence of the reported residual limb pain was 62%, and the prevalence of the reported non amputated limb pain was 53%.

The characteristics of the lower limb amputation – related back pain during the previous month to questionnaire are presented in table (2). The mean of back pain intensity on visual analogue pain scale was 5.6 ± 2.4. More than twenty three percent of lower limb amputees with post amputation back pain reported their average back pain intensity as mild (1-4), 50% reported their average back pain intensity as moderate (5 or 6), and 26.5% reported their average back pain as severe (7-10).

Table (1): Demographic and amputation characteristics.

Characteristics		Distribution No. (%)
Age (years)	20-40 41-60 ≥61	16 (30) 30 (57) 7 (13)
Sex (n)	Male Female	37 (70) 16 (30)
Residential area	Urban Rural	34 (64) 19 (36)
Educational level	< grade12 > grade12	40 (75) 13 (25)
Reason for amputation	DM Vascular Trauma Tumor	35 (66) 9 (17) 6 (11) 3 (6)
Level of amputation	Transtibial Transfemoral	39 (74) 14 (26)
Time since amputation (years)	< 2 ≥ 2	28 (53) 25 (47)
Daily prosthesis use (hours)	None < 5 ≥ 5	7 (13) 42 (79) 4 (8)
Co morbidity	None 1 ≥ 2	3 (6) 13 (24) 37 (70)
Reported Back pain	No Yes	19 (39) 34 (64)
Reported sites of pain	Back pain Phantom limb Residual limb None amputated limb	34(64) 41 (78) 33 (62) 28 (53)

DM: diabetes mellitus.

The majority of these with post amputation back pain (62%) described their back pain as intermittent and 38% described their back pain as constant. Of these with intermittent back pain, 77% reported one or less episodes of back pain in a week, 38.3% reported 2 or 3 episodes in a week and 54 % reported ≥4 episodes in a week. Regarding the duration of back pain episodes, 15 % reported the duration of their back pain episodes in minutes, 62% reported the duration of their back pain as long (hours) and 23% described their back pain as very long (day or longer). The mean of

back pain – related functional disability was 32 ±9.2 in amputees with constant back pain and 27±8.7 in amputees with intermittent back pain.

Table (2): Amputation-related back pain measures and associated functional disability.

Measures		No (%)
Intensity (n=34)	Mild (1-4) Moderate (5-6) Severe (7-10)	8 (23.5) 17 (50) 9 (26.5)
Pattern (n=34)	Intermittent Constant	21 (62) 13(38)
Frequency (n=13)	≤Once a week 2-3 times a week > 4 times a week	1 (7.7) 5 (38.3) 7 (54)
Duration (n=13)	Minutes Hours A day or longer	2 (15.4) 8 (61.5) 3 (23.1)
Functional disability score (n=34)	With constant pain (21) With intermittent pain (13)	32±9.2 27±8.7

Association between lower limb amputation – related back pain and characteristics of amputation is presented in table (3). As the age of lower limb amputees increased, the odds of development of back pain increased. The odds of back pain in amputees aged ≥ 61 yeas (OR=4.6; 95% CI =2.3-5.8) was nearly 7 times more than those of amputees aged 20 to 40 years (OR=0.7; 95% CI =0.3-1.1) and nearly 4 times more than those of amputees aged 41 to 60 years (OR=1.3; 95% CI=0.6-1.9). The prevalence of back pain in men was more than in women (OR=1.8; 95% CI=1.2-2.3). The odds of development of back pain in lower limb amputees who resided in the urban areas was higher than that in who resided in the rural area (OR =3.8; 95% CI=2.9 – 4.6).

The odds of development of back pain was higher in lower limb amputees with low education level than in those with high education level (OR=2.6; 95% CI=1.6-2.9). Diabetes mellitus, as a reason of amputation, associated with the highest risk of development of back pain in lower limb amputees. (OR=3.4; 95% CI= 2.9–5.1) .

The transfemoral amputation was associated with a higher risk of development of back pain than the transtibial amputation in the lower limb amputees. (OR=3.6; 95% CI=2.1-4.2). As the time since amputation increased the risk of development back pain increased (OR of duration ≥ 2years = 3.2; 95% CI 2.8 -3.6).

Table (3): Association between amputation-related back pain and characteristics of amputation.

Characteristics		Lower limb amputees (n=53)	Amputees with back pain (n =34)	Amputees without back pain (n =19)	Odds ratio (OR)	95% CI
Age (years)	20-40	16 (30)	9 (56)	7 (44)	0.7	(0.3-1.1)
	41-60	30 (57)	19 (63)	11 (37)	1.3	(0.6-1.9)
	≥61	7 (13)	6 (85.7)	1 (14.3)	4.6	(2.3-5.8)
Sex	Male	37 (70)	24 (65)	13 (35)	1.8	(1.2-2.3)
	Female	16 (30)	10 (62.5)	6 (37.5)	1.6	(0.8-1.9)
Residential area	Urban	34 (64)	27 (79)	7 (21)	3.8	(2.9-4.6)
	Rural	19 (36)	7 (37)	12 (63)	0.6	(0.2-1.3)
Educational level	< grade 12	40 (75)	29 (72.5)	11 (27.5)	2.6	(1.6-2.9)
	> grade 12	13 (25)	5 (38)	8 (62)	0.6	(0.4-1.4)
Reason for amputation	DM	35 (66)	27 (77)	8 (23)	3.4	(2.9-5.1)
	Vascular	9 (17)	4 (44)	5 (56)	0.8	(0.4-1.6)
	Trauma	6 (11)	1 (17)	5 (83)	0.2	(0.1-0.5)
	Tumor	3 (6)	2 (67)	1 (33)	2	(1.3-3)
Level of amputation	Transtibial	39 (74)	23 (55)	16 (42)	1.4	(0.9-1.9)
	Transfemoral	14 (26)	11 (79)	3 (21)	3.6	(2.1-4.2)
Time since amputation (years)	< 2	28 (53)	15 (54)	13 (46)	1.15	(0.8-1.5)
	≥ 2	25 (47)	19 (76)	6 (24)	3.2	(2.8-3.6)
Daily prosthesis use (hours)	None	7 (13)	1 (14)	6 (86)	0.06	---
	< 5	42 (79)	30 (71)	12 (29)	1.7	(1.2-2)
	≥ 5	4 (8)	3 (75)	1 (25)	4.4	(3.1-5.3)
Co morbidity	None	3 (6)	1 (33)	2 (67)	0.3	(0.1-0.7)
	1	13 (24)	8 (62)	5 (38)	3.2	(1.9-3.8)
	≥ 2	37 (70)	24 (65)	13 (35)	3.7	(2.7-4.3)
Other sites of pain in limbs	Phantom	41 (78)	29 (71)	12 (9	2.4	(1.9-3)
	Residual	33 (62)	24 (73)	(29)	2.6	(1.7-3.2)
	Non-amputated	28 (53)	12 (43)	16 (57)	0.8	(0.3-1.3)

The risk of development of back pain in lower limb amputees increased with increasing of duration of daily use of their prosthesis (OR of ≥5hours=4.4; 95% CI= 3.1- 5.3). As the number of co morbidity increased, the risk of development of back pain increased (OR of one co morbidity = 3.2; 95% CI = 1.9-3.8 and OR of ≥ 2 co morbidities=3.7;95% to CI= 2.7-4.3), presence of phantom limb was associated with a high risk of development of back pain (OR=2.4; 95% CI=1.9-3). Also, residual limb pain increased the risk of development of back pain in lower limb amputees (OR=2.6; 95 % CI=1.7-3.2). Pain in non-amputated limb was not associated with odds of development of back pain (OR=0.8; 95 % CI=0.3-1.3).

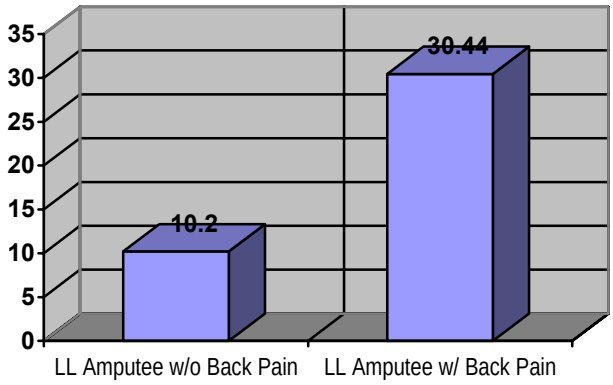

Fig. (1): revealed a significant difference in the functional disability in lower limb amputees with post amputation back pain as compared with these without back pain (t= 3.2, p< 0.05).

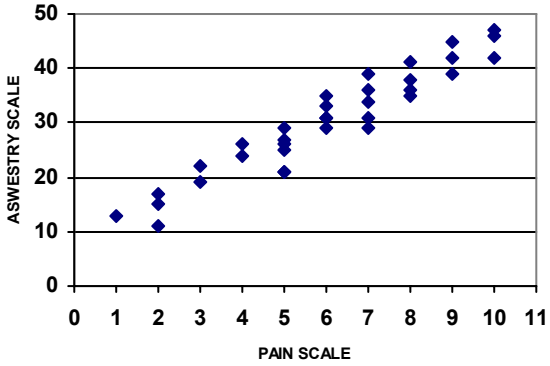

Fig. (2): display a significant positive correlation between the degree of back pain intensity and the level of back pain – related functional disability (r = + 0.7, p< 0.5).

DISCUSSION

The results of this study confirmed that post amputation back pain is common among lower limb amputees. Sixty seven percent of the studied sample of the lower limb amputees reported that they have post amputation back pain. This prevalence is higher than in the general population which range from 15% to 25% *(Andersen et al., 1991)*. This result is similar to that of *Smith et al. (1999)* who found that the prevalence of back pain in persons with lower limb amputations (76%) was higher than in the general population and rated as more bothersome than phantom limb pain or residual limb pain. *Ehde et al. (2001)* reported that back pain was surprisingly common among persons with lower limb amputations, where, 52% of their sample reported that they experienced persistent and bothersome back pain. *Stam et al. (2004)* found that the prevalence of serious low back pain (frequent or permanent) in persons with lower limb amputations (26.3%) was higher than in the general population. *Kulkarni et al. (2005)* concluded that low back pain in lower limb amputees was a significant problem equal to that of pain in the phantom limb and was a biomechanical rather than a degenerative etiology is suggested. *Ephraim et al. (2005)* found that the prevalence of back pain in persons with lower limb amputees was 62.3%. Recently, *Kusljugic et al. (2006)* concluded that the chronic low back pain was found among 89.6% of their sample of lower limb amputees.

In the present study, half of the studied lower limb amputees reported average of their back pain intensity in the moderate range (5 or 6 on visual analog pain scale) and the post amputation back pain interfere with the function of the amputees .These results are similar to those of *Ehde et al. (2001)* who found that about 43% of lower limb amputees with back pain reported average of back pain intensity in mild range (1-4 on 0 to 10 rating scale) and the back pain greatly interfere with the function of the lower limb amputees

In the present study, the majority of lower limb amputees who have back pain, their back pain were intermittent in pattern, with $\geq$ 4 episodes in a week, and most of those persons described the duration of their back pain episodes as long and last for several hours. These findings are similar to those of *Ehde et al. (2001)* who found that the majority of their sample with back pain (98%) described it as intermittent, with 2 or 3 episodes in a week, and the duration of back pain episodes was several hours or a day.

In this study, the risk of development of back pain in the studied sample of lower limb amputees is higher in old age. This finding is in agreement with that of *Smith et al. (1999)* and in contrast with that of *Ephraim et al. (2005)* who did not find any significant variation in the prevalence of back pain by age after controlling for other factors.

In the present study, the odds of development of back pain are higher in the male amputees than in the female amputees. This result is in contrast with that of *Stam et al. (2004)* who reported that the prevalence of low back pain in lower limb amputees was higher in the female than in the male amputees. Also, *Ephraim et al. (2005)* found that men with lower limb amputations were less likely to report back pain than women with lower limb amputations.

The results of this study found that diabetes Mellitus as a reason of lower limb amputation associated with the highest risk of development of back pain in lower limb amputees. This result is in disagreement with that of *Ephraim et al. (2005)* who did not find any significant variation in the prevalence of back pain by etiology of the amputation of lower limb after controlling for other factors.

This study found that the transfemoral amputation associated with a higher risk of development of back pain than the transtibial amputation. This finding is similar to that of *Smith et al. (1999)* who found that back pain to be significantly more frequent, intense, and bothersome in persons with above knee amputations compared with persons with below-knee amputation. While, in contrast with that of *Ehde et al. (2001)* who found that back pain to be similar in its occurrence, frequency, intensity, and severity for persons with lower limb amputations regardless of level of amputation. Also, *Ephraim et al. (2005)* did not find any significant variation in the prevalence of reported back pain between persons with above-knee amputations versus below-knee amputations.

In the present study, as the time since amputations increased, the risk of development of back pain increased. This finding is in agreement with that of *Ephraim et al. (2005)* who found a significant variation in prevalence of back pain in lower limb amputees by time since amputation.

The present study found that the odds of development of back pain in lower limb amputees increased as the number of co morbidities increased. This finding is in agreement with that of *Ephraim et al. (2005)* who reported that there was a significant variation in the prevalence of back pain by number of co morbidities.

In the present study, presence of phantom limb pain and residual limb pain in lower limb amputees increased the risk of development of back pain. This result is in agreement with that of *Kulkarni et al. (2005)* who found that 89% of lower limb amputees with back pain suffered from severe pain in the phantom limb and 81% of lower limb amputees with back pain suffered from severe pain in the residual limb.

This study found a significant difference between the level of the functional disability in lower limb amputees with back pain and in these without back pain. This result is similar to that of *Karen Friel et al. (2005)* who found a significant difference in self–perceived functional limitations in people with low back pain as compared with those without low back pain and the back pain is a possible explanation for limitation in daily activities

The present study found a significant positive correlation between the intensity of back pain in lower limb amputees and back pain–related functional disability. This result is in agreement with that of *Marshall et al. (1992)* who found that the Lower limb amputees with chronic back pain have been shown to report significantly more disability than lower limb amputees without back pain. *Jensen et al. (2001)* who found a non- linear association between back pain intensity and pain interference in lower limb amputees. Also, *Marshall et al. (2002)* concluded that the Chronic amputation related pain, including pain in the phantom limb, pain in residual limb and back pain, impaired function of the lower limb amputees .

Conclusions:

Back pain is common after a lower limb amputation. Several and different factors Put the lower limb amputees at risk for developing back pain. Measurement of back pain intensity is important to assess the back pain-related functional disability.

REFERENCES

Anderson GBJ, Pope MH, Frymoyer JW, Snook S and Cost (1991): Occupational low back pain: assessment and Prevention. In: Pope MH, Anderson GBJ, Frymoyer JV editors. (MO): Mosby 95-11.

Ehde DM, Czerniecki JM, Smith DG et al. (2000): Chronic phantom sensations, phantom pain, residual limb pain, and other regional pain after lower limb amputation. Arch Phys Med Rehabil 81 (8):1039-44.

Ehde DM, Smith DG, Czerniecki JM, Campbell KM, Malchow DM, Robinson LR (2001): Back pain as a secondary disability in persons with lower limb amputations. Arch Phys Med Rehabil 82:734-4.

Ephraim PL, Wegener ST, MacKenzie EJ and Dillingham TR, Pezzin LE (2005): Phantom pain, residual limb pain, and back pain in amputees: results of a national survey. Arch Phys Med Rehabil 86 (10):1910-9.

Hudson – Cook N, Tomes-Necholson K, Breen A (1989): A revised Oswesting disability questionnaire In : Roland Mo, Jenner JR, editors. Back pain: New approaches to rehabilitation and education. Manchester (UK): Manchester Univ 187-204.

Jensen MP, Smith DG, Ehde DM, Robinson LR (2001): Pain site and the effects of amputation pain: further clarification of the meaning of mild, moderate and severe pain. Pain 91: 317 -22.

Karen Friel, PT, Elizabeth Domholdt and PT, Douglas G.S (2005): Physical and functional measures related to low back pain in individuals with lower – limb amputation: An exploratory pilot study. JRRD 42 (2):155-166.

Kulkarni J, Gaine WJ, Buckley JG, Rankine JJ, Adams J (2005): Chronic low back pain in traumatic lower limb amputees. Clin Rehabil 19 (1):81-6.

Kusljugic A, Kapidzic – Durakovic S, Kudumovic Z and Cickusic A (2006): Chronic low back pain in individuals with lower – limb amputation. Bosn J Basic Med Sci. 6 (2):67-70.

Marshall M. Helmes E. Deathe AB (1992): A- comparison of psychosocial functioning and personality in amputee and chronic pain population. Clin J. Pain 8:351-7.

Marshall HM, Jensen MP, Ehde DM, Campbell KM (2002): Pain site and impairment in individuals with amputation pain. Arch Phys Med Rehabil 83:1116-9.

Massie DL (1999): Influence of lower extremity biomechanics and muscle imbalances on the lumbar spine Athletic Ther Today 3:46-51.

Nadler SF, Wu KD, Galski T, Fienberg JH (1998): Low back pain. Spine 23 (7):828-33.

Perry J (1992): Atlas of limb prosthetics: surgical, prosthetic, and rehabilitation principles. In: Bouker JH, Michael JW, editors. Atlas of limb prosthetics. St. Louis: CV Mosby 379.

Roach KE, Brown MD, Dunigan KN, Kusek CL, Walas M (1997): Test – retest reliability of patient reports of low back pain J. Orthop Sports Phys Ther 26 (5):253-59.

Smith DG, Ehde DM, Legro MW, Reiber GE, Del Aguila M, Boone DA (1999): Phantom Limb, residual limb and back pain after lower extremity amputations. Clin Orthop Rel Res. 361:29-38.

Stam HJ, Dommisse AM, Bussman HJ (2004): Prevalence of low back after transfemoral amputation related to physical activity and other prosthesis-related parameters Disabil Rehabil 26 (13):794-7.

ألم الظهر المرتبط بالبتر: معدل الإنتشار وعوامل الخطورة الملازمة له وعلاقته بالعجز الوظيفي

أمل بكرى أحمد عبدالستار

قسم الروماتيزم والتأهيل بكلية الطب جامعة الزقازيق

الهدف: تحديد معدل إنتشار وعوامل الخطورة الملازمة لألم الظهر الناتج عن بتر أحد الطرفين السفليين وتقييم نسبة العجز الوظيفي المترتب علي هذ الألم.

طريقة البحث: شملت هذه الدراسة 54 شخص تم إختيارهم جميعا من الأشخاص الخاضعين لعملية بتر لأحد الطرفين السفلين منذ مدةلاتقل عن عام ويستخدمون طرف صناعي تعويضى. وبعد سؤال جميع المشتركين في الدراسة عن وجود ألم بالظهر مابعد البتر فقد وجد أن 34 مشتركا يعانون من هذاالألم وقد طلب من هؤلاء المشتركين الذين يعانون من ألم الظهر تدوين قوة الألم باستخدام مقياس المدرج النظري و الإجابة على إستبيان لتسجيل طبيعة و مدة وتكرار نوبات ألم الظهر وكذلك عن وجود الم باجزاء أخري من الجسم. وقد تم تعليمهم إستخدام إستبيان اوسوستري المعدل لتحديد نسبة القصور الوظيفي الناتج عن ألم الظهر.

النتائج: وجدأن معدل إنتشار ألم الظهر بالمشتركين الذين خضعوا لبتر أحد الطرفين السفليين كان أربعة وستون بالمائة. وكان متوسط قوة هذا الألم 6و5. كان معدل إنتشار ألم الظهر بالمشتركين الرجال أكثر من النساء و أنة كلما زاد عمر المشترك زاد معدل إنتشار ألم الظهر. وجد أن إمكانية حدوث ألم الظهر بالمشتركين المقيمين بالمناطق الحضرية أكثر من المقيمين بالمناطق القروية كما وجد أن إمكانية إنتشاره بالمشتركين ذات التعليم الأقل من المستوي الثاني عشر أكثر من إنتشاره بالمشتركين ذات التعليم الأعلي من المستوي الثاني عشر. كان ألم الظهر اكثر انتشار مع البتر مافوق الركبة من البتر أسفل الركبه كما وجد أن إمكانية حدوث ألم الظهر كانت تزداد طرديآ مع المدة التي تلي البتر وكذلك مع زياده عدد ساعات إستخدام الطرف الصناعي يوميآ . كان مرض البول السكرى أكثر أسباب البتر المشتركة مع ألأم الظهر. كانت أمكانية حدوث ألم الظهر عالية في المشتركين الذين يعانون من الم الشبح والألم الموجود في الجزء المتبقي من الطرف السفلي بعد البتر.كما وجد أن هناك إختلاف ذات دلاله إحصائية في درجه القصور الوظيفي بين المشتركين الذين يعانون من ألم بالظهر والمشتركين الذين لم يعانوا من ألم الظهر. كما وجدت علاقة ذات دلاله موجبة بين درجة قوة ألم الظهر ومستوي القصور الوظيفي الملازم لهذا الألم.

الإستنتاج: إستنتجت هذه الدراسة أن معدل إنتشار ألم الظهر بين الأشخاص الخاضعين لعملية بترأحد الطرفين السفلين مرتفع. وأن معرفة عوامل الخطورة المؤدية لهذا الألم تساعد علي تحديد خصائص الأبتر الأكثر عرضه لهذا الألم وتوجيه التدابير الاحترازية لمنع حدوثه. كما أن قياس قوة ألم الظهر مهمه لتحديد درجة القصور الوظيفي الناتج عن هذ االألم.