*Egyptian Journal of Surgery Vol. (21), No. (4), Oct., 2002*

# LEG CHRONIC VENOUS INSUFFICIENCY (LCVI): EPIDEMIOLOGY AND IMPACTION ON QUALITY OF LIFE (QOL)

**By**
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**Objectives:** *to determine the prevalence of LCVI and its impaction on QOL. *Siting: City of Mansoura in Egypt, Patients and methods: Men and women aged from 15 to 75 years attended the outpatient clinic of Surgery in Mansoura University hospital during the period from October 2000 to December 2001.*
**Methods:** *Clinical examination, Doppler ultrasound and sometimes duplex scanning were done.*
**Results:** *Out of 3259 subjects examined, 350 (10.7%) were diagnosed as LCVI. Mean age ± SD was 41.5 ± 9.4 years. Age, sex and residence differences were statistically insignificant (P>0.05). The prevalence of varicose veins (VV) was 2.2%, varicose ulcer (VU) was 2.4% and the oedema or skin changes was 4.1% generally, VV was greater in females, young ages and low education level. While, VU and oedema or skin changes were higher in males, old ages and low social classes (P>0.05). Concerning impact of LCVI on QOL, 61.9% of these cases recorded in the questionaire had restricted daily activity, 18.7% had change in work activity, 7.1% decreased activity , 9.1% absenteesm from work, 2.3% change in pattern of work, 26.3% psychological destress, and 11.5% complications due to treatment. All these were higher in VU (P<0.05). However, cosmotic disfigurement was the complaint of 52.5% mostly among VV patients. Hospital stay due to this disease was 39.9% for 5.29 ± 0.7 days.,*
**Conclusion:** *LCVI is an important disease, it is prevalent in Mansoura, Egypt. Early case detection and management is needed on primary health care level due to its bad effects on QOL. Further community based study is needed to determine the actual size of the problem.*
*Keywords: Chronic Venous insufficiency – prevalence-Impaction on quality of life.*

## INTRODUCTION

Diseases of the venous system is an underestimated public health problem, this may be partly due to methodological problems in defining chronic venous insufficiency (CVI) and measuring this problem with sufficient validity [1]. Chronic venous disease of the lower limbs is one of the most common conditions affecting humankind [2].

Chronic venous insufficiency (CVI) is not a minor disorder; because of its chronic character, patients require long-term therapy and at the end, symptoms often force the patients to entire prematurely with severe personal and social restrictions [3].

Chronic venous insufficiency (CVI) of the leg is demonstrated on 25% of the Western Europian population [4]. In Egypt, there is no obvious reported data about the actual magnitude and distribution of the problem; only some studies included occupational groups reported a prevalence rate of varicose veins above 30%.

The prevalence of lower extremity ulceration secondary to chronic venous insufficiency (CVI) in European and Western populations is estimated to be 0.5%-1% [5]. It was recently reported that 1.3% of the total health care budget in U.K. is used for the treatment of venous ulcers, indicating the significant financial burden this disease imposes the community [6].

Kurz et. al., [7] stated that chronic venous insufficiency (CVI) is an important public health problem in western society based on prevalence, cost and impact on quality of life (QOL).

Nothing is recorded or written about the epidemiology of this disease, its prevalence, risk factors or type of lifestyle among Egyptians that affect its occurance. Also, there is severe lacking in knowledge about the impact of this disease on the quality of life (QOL) of the affected persons from physical, psychological and social aspects. So, this research work attracted the attention to the need for conduction of a community-based survey about the epidemiology of CVI of the legs as regard prevalence, risk factor, its impact on the quality of life, its prevention and control. But due to many official limitations and obstacles like time limitation and financial support we shifted to a hospital-based study among patients attending Vascular Surgery outpatient clinic. It is a suitable method to determine the point prevalence of CVI of the legs and conduct an analytical case control to estimate the risk factors and pattern of lifestyles that determine occurance of CVI. Also, to study the effect of the disease on the quality of life.

## PATIENTS AND METHODS

Males and females aged 15 years and older who attended the outpatient clinic of vascular surgery in Mansoura University Hospital (MUH) during the period from October 2000 to December 2001. Hospital based combined descriptive and analytic study to determine point prevalence of LCVI cases among patients attending the surgical outpatient clinic in MUH and their socio-demographic characteristics, the impact of leg CVI on the QOL of the affected patients through a case history study. For this purpose a control group comparable to LCVI persons in all socio-demographic variables, were selected from the same outpatient clinic and their number equal to the number of LCVI cases.

All the patients and the control persons were interviewed and their verbal consents were obtained to be enrolled in this study. They were exposed to :

**A questionnaire covered the following aspects:*

- Socio-demographic characteristics occupational characters , personal habits that may lead to development of LCVI like walking habits, smoking, drinking alcohol, and type of diet (healthy or not).

- Questionnaire for female only about parity, the ever use of hormonal contraception (pills, injection, norplant, and its duration) , and menopause.

- History of systemic diseases.

- Medical history of specific (local) leg diseases, phlebitis, past history of leg ulceration and varicosities. History of previous management and/or hospital stays.

- Family history of systemic and local leg diseases. History of drug use.

- Questions concerning the impact of chronic venous disease of the leg (CVDL) on the QOL of the affected patients: according to the Short Form Health Survey-36 (SF-36), [Sickness Impact Profile (SIP) in the US and the Nottingham Health Profile (NHP) in UK] designed for use in clinical practice and research, health policy evaluatin and general population surveys [9].

This questionnaire was modified to suit conditions, believes and traditions of Egyptian patients. It includes-restricted daily activities, changes in the working activities, pattern of change and work absenteeism. Bed disability days and hospital stay days/ patient. Perception of pain on the leg, psychological distress, cosmotic disfigurement, presence of complications and drug side effects.

**Clinical examinations of LCVI patients and the controls:*

- Obtaining the present history and patient's complaints which included : Pain, swelling, skin changes (superficial varicosities, brown pigmentation, spider telengectasia, purpura, prominanent varicosities and skin ulceration), night cramps, discharge from venous ulcer, asymmetry of both legs.

- General examination including (height, weight, vital signs (pulse, blood pressure, and temperature).

- Systematic examination of head and neck, heart, chest, abdomen, neurological and joint examination.

- Local examination of the affected limb as regard site, skin, oedema, musculoskeletal, venous survey and tourniquet test.

**Investigations included laboratory investigations and Doppler ultrasonography, duplex scaning.*

**Statistical analysis:*

The obtained data were collected and analysed using the statistical package of social science (SPSS). The point prevalence rate of LCVI was calculated by dividing the LCVI cases diagnosed during the working days by the total attendance of the Vascular Surgery outpatient clinic during the same period. To study the associated risk factors, the crude measure of association between single putative risk factor and LCVI prevalence was expressed as odd rates

with the corresponding 95% confidence interval. All factors found to have significant association with CVI in Bivariate analysis were submitted to multivariate logistic regression to control confounders[10].

A preliminary study was carried out on 30 persons to test the designed questionnaire and discover any obstacles to overcome and managed during conduction of the study.

## RESULTS

Out of 3259 subjects examined at the outpatient Surgical clinic of MUH, 350 (10.7%) were diagnosed as LCVI. Mean age ± SD was 41.5 ± 9.4 years. The age, sex and residance differences were statistically insignificant (P>0.05), (Table 1).

The prevalence of varicose veins (V.V.) was 4.2 %, oedema or skin changes was 4.1%, and varicose ulcer (VU) was 2.4 %. Varicose veins (V.V.) was greater in females, young ages, married and low education level. While, oedema or skin changes and varicose ulcer (VU) were higher in males, old ages, single and low social classes (P> 0.05) , (Table 2). Varicose veins were prevelant among the non working patients while oedema and skin changes were prevelant among working patients (P<0.001). On the other hand, oedema and skin changes were predominant among manual workers who stand mostly and also, among the official workers (P<0.05), (Table 3).

Varicose veins were the most predominant in all female cases under any condition. The differences were statistically significant regarding the ever use of hormonal contraception in V.V., oedema and skin changes and only in V.V. regarding number of parities (P<0.05), (Table 4) and (Fig.1).

Concerning impact of LCVI on QOL, 61.9 % of these cases recorded in questionnaire had restricted daily activities, 18.7 % had change in work activity, 7.1 % decrease in activity, 9.1 % absenteesm from work, 26.3 % psychological distress, and 11.4 % developed compications due to treatment. All these were higher in varicose ulcer patients (P< 0.05) (Table 5). However cosmotic disfigurement was the complaint of 52.5 % of patients mostly among V.V. patients , (Fig. 2).

Hospital stay due to this problem was 36.9 % for 5.29 ± 0.7 days, (Table 5`).

The impact of some risk factors and predisposing conditions matched in LCVI and controls revealed that from total 350 cases and 350 controls 41.1 % and 33.7 % respectively were smoking (cigarette or goza).The differences Between cases and controls regarding smoking were statistically significant (P< 0.05).

Concerning work as risk factor 29.7 % of the patients and 50.9 % of the controls have no work (P< 0.05). The pattern of work also affects greatly the occurance of LCVI as 43.7 % of cases work manually and mostly stand during their time of work, in contrast to only 25.1 % among controls (P< 0.05), (Table 6). Also, 67.9 % of LCVI were female and 43.3 % of female controls had 3 or more parities. 72.8 % of female cases and 43.9 % of female controls were ever used hormonal contraception. The duration of its use over 5 years was reported. 93.6 % of female cases and 67.1 % of female controls were premenopausal (P< 0.001), (Table 7).

The past history of leg diseases as risk factors in LCVI showed that 81.1 % of LCVI cases and 46.3 % of controls reported past history of phlebitis (P< 0.001) . Past history of varicose veins was reported by 84 % of LCVI cases and non of controls (P<0.001). Leg swelling were reported in 14 % of cases and 6.3% of controls. Leg cramps on walking and on bed were reported and were statistically significant (P<0.001), (Fig. 3).

Family history of leg diseases as risk factors in CVI, it was evident that 46.3% of LCVI cases and 36.9% of controls reported positive family history of phlebitis and the difference is statistically significant . Family history of leg swelling was 37.4% of cases and 9.7% of controls with high statistically significant difference. 28% among cases reported positive family history of leg ulcers and only 2.6% among controls with high statistically significant difference. Regarding family history of varicose veins there were (52%) of cases and (14.6%) of controls had family history of varicose veins, and this difference is highly statistically significant , (Table 8).

There was increased risk of developing LCVI among those suffering from medical obesity followed by those suffering from cosmotic obesity. The differences between cases and controls concerning BMI were highly significant (P< 0.001), (Table 9).

**Table (1):** ***Prevalence and Socio-demographic characters of LCVI cases among attendants of Outpatient surgical clinic of MUH during the period from Oct. 2000 to Dec. 2001.***

| *Socio-demographic characters* | *Outpatient attendants Total No. 3259** | *LCVI cases No. % 350 (10.7)* | *Test of Significance $X^2$ P =* | *Odds Ratio* |
|---|---|---|---|---|
| **Age in years: -** | | | | |
| • 15-R | 335 | 31 (9.30) | | 1.00 |
| • 30- | 1825 | 189 (10.4) | **$X^2$ =** | 1.13 |
| • 45- | 1044 | 120 (11.5) | > 0.05 | 1.27 |
| • 60-75 | 55 | 10 (18.2) | | 2.18 |
| X ± SD | 45.2 ± 5.4 | 41.5 ± 9.4 | **t test** (p>0.05) | |
| **Gender :-** | | | | |
| • MaleR | 1970 | 210 (10.7) | **$X^2$ =** | 1.20 |
| • Female | 1289 | 140 (10.9) | > 0.05 | |
| **Residence :-** | | | | |
| • UrbanR | 1780 | 187 (10.5) | **$X^2$ =** | 1.05 |
| • Rural | 1479 | 163 (11.0) | > 0.05 | |

***NB: This is the total number of attendants to the surgical outpatient clinic registered during the working days***
***- R* : reference Category***
***- LCVI = Leg Chronic Venous Insufficiency.***

**Table (2):** ***Socio-demographic characters of the studied LCVI cases by its different Presentations.***

| *Pattern of LCVI* / *Character* | *Varicose Veins cases* | *Varicose Ulcer* | *Oedema and Skin Changes* |
|---|---|---|---|
| | *No. % 139 (39.7)* | *No. % 78 (22.3)* | *No. % 133 (38)* |
| X ± SD | 40.6 ± 7.8 | 41.9 ± 10.6 | 42.1 ± 10.2 |
| ▪ **Residence:** | | | |
| • Urban | 70 (37.4) | 43 (23.0) | 74 (39.6) |
| • Rural | 69 (42.3) | 35 (21.5) | 59 (36.2) |
| **Test of Significance: ($X^2$)** | **>0.05** | **>0.05** | **>0.05** |
| ▪ **Marital status:** | | | |
| • Single | 26 (35.6) | 17 (23.3) | 30 (41.1) |
| • Married | 113 (40.8) | 61 (22.0) | 103 (37.2) |
| **Test of Significance: ($X^2$)** | **>0.05** | **>0.05** | **>0.05** |
| ▪ **Education:** | | | |
| • Illiterate & Read | 65 (43.1) | 39 (25.8) | 47 (31.1) |
| • Primary & Preparatory | 27 (71.1) | 4 (10.5) | 7 (18.4) |
| • Secondary & above | 47 (29.2) | 35 (21.7) | 79 (49.1) |
| **Test of Significance: ($X^2$)** | **<0.001** | **>0.05** | **<0.001** |
| ▪ **Social Class:** | | | |
| • Low | 57 (36.5) | 36 (23.1) | 63 (40.4) |
| • Moderate | 69 (41.8) | 35 (21.2) | 61 (37.0) |
| • High | 13 (44.8) | 7 (24.1) | 9 (31.1) |
| **Test of Significance: ($X^2$)** | **>0.05** | **>0.05** | **>0.05** |

**Table (3):** ***working pattern among LCVI cases by its different presentations.***

| *Character* \ *Pattern of LCVI* | *Total Cases* | *Varicose Veins cases* | *Varicose Ulcers cases* | *Oedema and Skin Changes cases* |
|---|---|---|---|---|
| | **No. % 350 (100)** | **No. % 139 (39.7)** | **No. % 78 (22.3)** | **No. % 133 (38)** |
| ▪ **Work:** | | | | |
| ● No | 104 (100) | 71 (68.3) | 17 (16.3) | 16 (15.4) |
| ● Yes | 246 (100) | 68 (27.6) | 61 (24.8) | 117 (47.6) |
| **Test of Significance: P** | | **<0.001** | **>0.05** | **<0.001** |
| ▪ **Pattern of work:** | | | | |
| ● Manual & Mostly Stand | 153 (100) | 41 (26.8) | 34 (22.2) | 78 (51.0) |
| ● Official & Mostly sit | 93 (100) | 27 (29.0) | 27 (29.0) | 39 (42.0) |
| **Test of Significance: P** | | **<0.05** | **>0.05** | **<0.05** |

**Table (4):** ***Maternal Criteria among LCVI female cases by its different stages.***

| Character \ *Pattern of LCVI* | | *Varicose Veins cases* | *Varicose Ulcers cases* | *Oedema and Skin Changes* |
|---|---|---|---|---|
| | (%) | No. % 87 (62.1) | No. % 23 (16.4) | No. % 30 (21.4) |
| ▪ **Hormonal Contraception:** | | | | |
| ● No | 27.2 | 17 (44.7) | 6 (15.8) | 15 (39.5) |
| ● ≤5 years | 2.1 | 2 (66.7) | 0 (00.0) | 1 (33.3) |
| ● > 5 years | 70.7 | 68 (68.7) | 17 (17.2) | 14 (14.1) |
| **Test of Significance: P** | | **<0.05** | **>0.05** | **<0.05** |
| ▪ **Menopause:** | | | | |
| ● No | 93.6 | 79 (60.3) | 22 (16.8) | 30 (22.9) |
| ● Yes | 6.4 | 8 (88.9) | 1 (11.1) | 00 (0.0) |
| **Test of Significance: P** | | **>0.05*** | **>0.05*** | **>0.05*** |

** Fisher Exact test was done.*

**Table (5):** ***Impact of LCVI on the quality of life (QOL) studied cases.***

| *QOL* \ *Pattern of CVI* | *Varicose Veins* | *Varicose Ulcer* | *Others* | $X^2$ |
|---|---|---|---|---|
| | ***No. % 139 (100)*** | ***No. % 78 (100)*** | ***No. % 133 (100)*** | ***P =*** |
| ▪ **Change in Work Activity:** | | | | |
| ● No | 110 (79.1) | 55 (70.5) | 120 (90.2) | <0.05 |
| ● Yes | 29 (20.9) | 23 (29.5) | 13 (9.80) | |
| ▪ **Pain Perception:** | | | | |
| ● No | 76 (45.7) | 24 (30.8) | 110 (82.7) | <0.001 |
| ● Yes | 63 (45.3) | 54 (69.2) | 23 (17.3) | |
| ▪ **Psychological Distress:** | | | | |
| ● No | 108 (11.7) | 56 (71.8) | 94 (70.7) | >0.05 |
| ● Yes | 31 (22.3) | 22 (28.2) | 39 (29.3) | |
| ▪ **Cosmetic Disfigurement:** | | | | |
| ● No | 53 (38.1) | 35 (44.9) | 78 (58.6) | <0.05 |
| ● Yes | 86 (61.9) | 43 (55.1) | 55 (41.4) | |
| ▪ **Complications to treatment:** | | | | |
| ● No | 124 (89.2) | 64 (82.1) | 122 (91.7) | >0.05 |
| ● Yes | 15 (10.8) | 14 (17.9) | 11 (8.30) | |

**Table (5`):** *Hospital stays (of the same disease) among LCVI cases.*

| Group / Hospital stays | LCVI Cases No. | % |
|---|---|---|
| ▪ **Hospital stay for this problem:** | | |
| ● Yes | 129 | (36.9) |
| ● No | 221 | (64.1) |
| ▪ **Duration of stay:** | | |
| **X ± SD** | **5.29 ± 0.71** | |
| ● ≤5 years | 95 | (27.2) |
| ● > 5 years | 34 | (9.70) |
| **Total** | 350 | (100) |

**Table (6):** *Personal habits and working pattern as risk factors in LCVI cases.*

| Character / Group | Cases No. | % | Control No. | % | $X^2$ P = | OR (95% CI) |
|---|---|---|---|---|---|---|
| | *350* | *(100)* | *350* | *(100)* | | |
| ▪ **Smoking:** | | | | | | |
| ● No | 206 | (58.9) | 232 | (66.3) | **$X^2$ = 4.12** | 1.37 |
| ● Yes, Cigarette or goza$^R$ | 144 | (41.1) | 118 | (33.7) | **≤0.05** | (1.00-1.89) |
| ▪ **Since when:** | | | | | | |
| ● ≤10 years | 102 | (70.8) | 97 | (82.2) | **$X^2$ = 4.59** | 1.90 |
| ● > 10 yearsR | 42 | (29.2) | 21 | (17.8) | **≤0.05** | (1.01-3.63) |
| ▪ **Number/ Day for cigarette:** | | | | | | |
| ● ≤20 R | 28 | (19.4) | 44 | (37.3) | **$X^2$ = 15.6** | 3.50 |
| ● > 20 | 116 | (80.6) | 74 | (62.7) | **≤0.001** | (1.77-7.10) |
| ▪ **Work:** | | | | | | |
| ● No R | 104 | (29.7) | 178 | (50.9) | **$X^2$ = 32.52** | 2.45 |
| ● Yes | 246 | (70.3) | 172 | (49.1) | **<0.001** | (1.77-3.38) |
| ▪ **Pattern of work:** | | | | | | |
| ● Manual & mostly stand | 153 | (43.7) | 88 | (25.1) | **$X^2$ = 5.05** | 1.57 |
| ● Yes, Official & mostly sitting R | 93 | (26.6) | 84 | (24.0) | **≤0.05** | (1.04-2.38) |

*R: is the reference Catalog.*

**Table (7):** ***Maternal criteria as risk factors for LCVI.***

| *Group* / *Maternal Criteria* | *Cases* | *Control* | $X^2$ *P =* | *OR (95% CI)* |
|---|---|---|---|---|
| | *No. % 140 (100)* | *No. % 164 (100)* | | |
| ▪ **Parity:** | | | | |
| ● ≤ 2 | 45 (32.1) | 93 (56.7) | **$X^2$ = 34.4** | 4.68 |
| ● ≥ 3 | 95 (67.9) | 71 (43.3) | **<**0.001 | (2.67-8.32) |
| ▪ **Hormonal Contraceptive:** | | | | |
| ● No | 38 (27.2) | 92 (56.1) | **$X^2$ =25.9** | 3.43 |
| ● Yes | 102 (72.8) | 72 (43.9) | **<**0.001 | (2.06-5.74) |
| ▪ **Duration of Use:** | | | | |
| ● ≤5 Years | 3 (2.10) | 4 (2.40) | Fisher Exact | 1.94 |
| ● > 5 Years | 99 (70.7) | 68 (41.5) | <0.05 | (0.32-13.62) |
| ▪ **Menopause:** | | | | |
| ● No | 131 (93.6) | 110 (67.1) | **$X^2$ =25.4** | 6.22 |
| ● Yes | 9 (6.40) | 54 (32.9) | **<**0.001 | (2.85-14.97) |

**Table (8):** ***Family History of leg disease as risk factors in LCVI.***

| *Group* / *Leg disease in the family* | *Cases* | *Control* | $X^2$ *P =* | *OR (95% CI)* |
|---|---|---|---|---|
| | *No. % 350 (100)* | *No. % 350 (100)* | | |
| ▪ **Phlebitis:** | | | | |
| ● Yes | 162 (46.3) | 129 (36.9) | **$X^2$ = 6.4** | 1.48 |
| ● No | 188 (53.7) | 221 (63.1) | **<**0.05 | (1.08-2.02) |
| ▪ **Leg swelling:** | | | | |
| ● Yes | 131 (37.4) | 34 (9.70) | **$X^2$ =74.61** | 5.56 |
| ● No | 219 (62.6) | 316 (90.3) | **<**0.001 | (3.62-8.68) |
| ▪ **Leg Ulcer:** | | | | |
| ● Yes | 98 (28.0) | 9 (2.60) | **$X^2$ =87.39** | 14.73 |
| ● No | 252 (73.0) | 341 (97.4) | <0.001 | (7.24-33.7) |
| ▪ **Varicose veins:** | | | | |
| ● No | 182 (52.0) | 51 (14.6) | **$X^2$ =110.4** | 6.35 |
| ● Yes | 168 (48.0) | 299 (85.4) | **<**0.001 | (4.36-9.32) |

**Table (9):** ***Obesity as risk factor in LCVI.***

| *Group* / *Body mass Index (BMI)* | *Cases* | *Control* | $X^2$ *P =* | *Odds Ratio for Trends* |
|---|---|---|---|---|
| | *No. % 350 (100)* | *No. % 350 (100)* | | |
| ● **Normal** $^{R}$ **(BMI)** | 49 (14.0) | 175 (50.0) | **$X^2$ =115.65** | 1.00 |
| ● Cosmetic Obesity | 240 (68.6) | 163 (46.6) | **<**0.001 | 5.26 |
| ● Medical **Obesity** | 61 (17.4) | 12 (3.40) | | 18.15 |

***R= Reference Category***

- Classification is based on (WHO classification , 1995)
- BMI= Weight in Kg / (Height in meter) $^{2}$
- Normal BMI =<25· Cosmotic obesity = 25 –28
- Medical Obesity => 28.

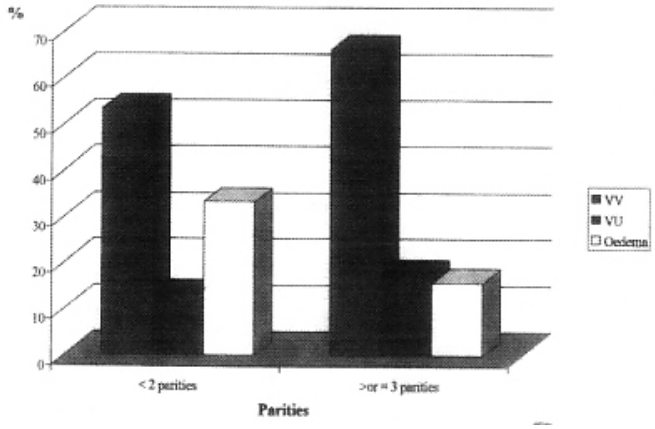


*Fig (1): Parities in Differnet LCVI stages*

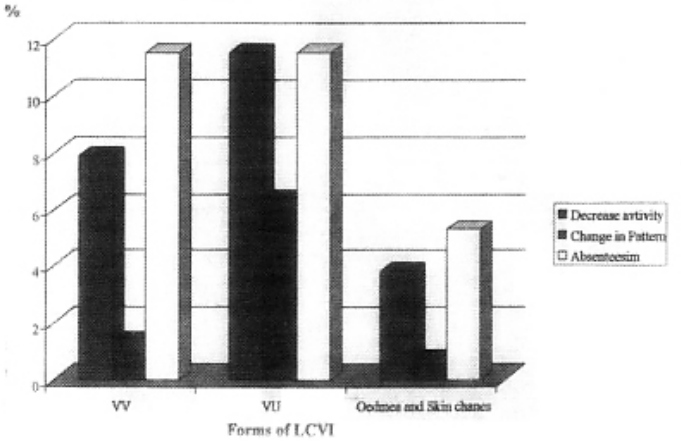


*Fig (2): Type of Work Changes by different LCVI Forms*

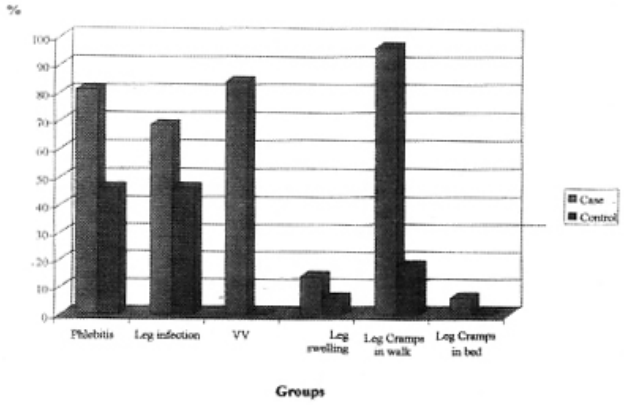


*Fig (3): Positive Past History for some leg diseases*

## DISCUSSION

The overall prevalence of LCVI in this study was 10.7% which was slightly higher than those given by Evans [11], who reported a prevalence rate of 7.9 % . This difference may be due to differences in the methods of the study as this study was hospital while their studies were community based. Concerning the age prevalence of LCVI cases, this study revealed that the prevalence was increasing with age advancement from 15-30-45-60 years to 75 years most probably due to increase the incidence of risk factors by aging . This was in agreement with the results got by Yale [12] who foud the prevalence increased with age advancement.

The mean age ± SD of LCVI cases in this study was 41.5 ± 9.4 years which was greatly lower than that reported in USA by Scott [13], 59 ± 1.6 years. This means that LCVI affect Egyptians at younger age. This may be attributed to the fact that most of Egyptians are unaware about precautions and preventive measures followed to avoid LCVI.

The present study showed that the prevalence of LCVI in males and females were 10.7 % and 10.9 % respectively where as, female preponderance was reported by Capitao [14] in Portugal who attributed this to the frequent pregnancy and this was also confirmed by Evan [11].

Patients in this study were presented by one of the following : V.V, V.U. or oedema and skin changes with prevalence rates 4.2 %, 2.4 %, and 4.1 % respectively as that was previously reported by Evan [11], Scott [13], and Rutherford [15].

In our study varicose veins was predominant in females while varicose ulcers and oedema were predominant in males. These results cope with that of El Tokhy [16] who found V.V. was predominant in females also, Scott [13] and Kurz [7] who reported that in females, preponderance of venous related oedema is less marked than that of varicose veins. The same results were also obtained in Basle study by Widmer [17]. Illiterate and low educated cases had V.V. more than higher educated due to the fact that first category are manual workers who stand mostly during work. This results are cope with the results of Scott [13].

Concerning the impact of work on LCVI, it is found : oedema and skin changes were significantly increased among manual workers who stand during their work. This results are coapted with those of El Tokhy [16] and Scott [13] who found LCVI were higher among workers standing mostly.

Regarding the impact of parities and hormonal contraception, we found that, there is increased risk for LCVI with the increased number of parities, this was in agreement with Maffei, Brand and Scott [18, 19, 13]. This could be explained by the hormonal effect and the additional burden of increased venous congestion and blood stasis [20 & 21] . Also, it was evident that exposure to hormonal contraception (pills, injections or norplant) associated with increased risk of LCVI. This risk is directly proportionate with the duration of exposure. This is in agreement with Scott and Meissner [13 &21]. They attributed this increase to blood hypercoagulability and stasis occured with long use of hormonal contraception.

Restrictions of daily activities was recorded in 61.9 % of all LCVI cases with increased restriction towards venous ulcers (78.2 %). This could be attributed to the presence of pain in the leg especially in cases of venous ulcers (69.2 %). These results came in agreement with that of Lamping, Franks, and Kahn [22, 23, 24].

Working activity was changed in 18.7 % of all LCVI cases with more changes in venous ulcers (29.5 %). This is in consistent with Lamping and Franks [25, 23] who reported that leg pain was felt in about 40 % of LCVI case with higher incidence among venous ulcer 96.2 %.

Cosmotic disfigurement was found in 52.5 % of CVI case with more inclination towards varicose veins 61.9 % and this with total agreement to the results of Franks[23].

Psychological distress was recorded in 26.3 % of the studied LCVI cases. This may be due to the limitation of daily activities, disfigurement due to swelling and ulceration and their sequalae and costs of treatment that burden the already exhausted income of the patients [26, 23].

Hospital stays for more than 5 days was reported in 36.9 % of LCVI cases. Monreal [27] mentioned that CVI ranks in the 14th place among the 50 principal diseases that cause absence from work consequently given the right to receive benefit from social security.

Personal habits are studied as risk factors for LCVI cases. In this study smoking was suggested to have direct role in LCVI development. This is in agreement with Scott, Weihermuller and Gourgou [13, 28, 29] who found that smoking increase the risk of LCVI and this risk is greatly increased if the patient smoked more than 20 cigarettes per day for more than 10 years.

The work and working pattern is a highly significant ($P < 0.001$) risk factors for development of LCVI especially manual and mostly standing works. This is consistent with

the results of Weihermuller and Fowkes [23,30]. El Tokhy [16] found an increased prevalence of V.V. among teachers with prolonged standing. This can be explained by the fact that prolonged standing lead to venous hypertension in the lower extremities by the effect of gravity with inability of the lower limb muscles to oppose the effect of gravity leading to affection of the valves with later failure [31].

Increased parities than 3 and exposure to hormonal contraception for more than 5 years in female cases are risk factors for development of LCVI, This could be attributed to the burden of increased venous blood content due to hormonal factors and increased incidence of thrombosis due to hypercoagulability of blood and the associated blodd stasis due to increased intra-abdominal pressure [27,28,30].

Past history of local leg diseases especially phlebitis, varicose veins were associated with increased risk of development LCVI. There was statistical significant difference between cases and controls ($P< 0.001$). This came in acceptance with Scott, Huynh and Weihermuller [13, 32, 28].

History of leg swelling is reported in 14% of LCVI cases and 6.3 % of controls, leg cramps during walking 96.6 % in cases of LCVI while 18 % only of controls, where as, 6.30 % of the cases reported leg cramps during bed time and non of the controls. This is in agreement with Scott, Fawkes and Evan [13, 30, 3].

Finally we conducted a logistic stepwise regression analysis model to predict the occurance of LCVI from the presence of significant risk factors. We found that past history of phlebitis, presence of obesity followed by family history of varicose veins carries the higher predictor risk. These were in consistence with Scott [13] who found that this was true for obesity, history of leg diseases and diabetes mellitus.

## CONCLUSION

The epidemiological trasition occuring recently in developing countries, leading to a shift from infectious and parasitic diseases to chronic diseases requires the designing public health strategies dealing with the consequences of such profound transformation.

On the other hand, in context of limited economic resources, it is of vital importance to reveal the impact of these chronic diseases on QOL, work, and community income. This study showed the magnitude of LCVI problem in Mansoura as well as incriminated factors. Implementing a very simple strategy for reduction of LCVI related burden and represented a valuable example for the methodology needed to identify priorities in the context of rapidly changing social and public health scenario.

We recommend doing future conduction of cross-sectional community based epidemiological study to evaluate the magnitude of LCVI in general population. This needs more budget, equipment and manpower (epidemiologist, vascular surgeon, Psychatritcian and economist).

We recommended a strong health education message to be provided general population and high risk groups especially through mass media. This message must be : clear, precise, short definition of the problem, predisposing factors, its recognition, importance of early seeking medical care to prevent disability and complications and easy appropriate correct preventive measures.

Special care to obese persons, those with past history of phlebitis, leg lesion and family history of varicose veins as they carry high predictor risk than others. Special care to be applied to teachers, nurses and other occupations that require regular prolonged standing regarding screening follow up and early case finding with prompt and proper treatment to prevent complications.

Training of physicians working in PHC on methods of detection of LCVI including the use of hand held Doppler ultrasound especially in high risky persons for early case finding and proper management.

Co-operation is advised between different health sectors for combating this problem before it becomes an obstacle for development and improvement.

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