

# SELECTED ABSTRACTS FROM THE BLS ANNUAL CONFERENCE

In recent years the British Lymphology Society (BLS) has been keen to encourage its members to present work at its annual conference, either in the form of a poster or an oral presentation. A growing number of members have taken up this challenge and in the last few years a research advisory board (RAB) has been formed, one of whose functions is to review the abstracts submitted for presentation at the annual conference. The BLS RAB is delighted that the *Journal of Lymphoedema* has agreed to publish the following selected abstracts from last year's BLS conference. *Vaughan Keeley, Chair of BLS RAB*

## Liposuction for chronic lymphoedema — the first 30 months in Dundee, Scotland

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A surgical service offering liposuction for appropriate lymphoedema patients was established in Dundee, Scotland in 2005, following a visit to Dr Brorson in Malmö by the lead surgeon. In the first 30 months, a total of 22 patients (20 female; 2 male) have been assessed, 14 with lymphoedema of the upper limb and eight with lymphoedema involving the lower limb. Thirteen patients had upper limb lymphoedema secondary to breast cancer treatment, with one patient developing lymphoedema shortly after a thyroidectomy. All lower limb lymphoedema cases were congenital, with two patients having bilateral swelling.

Guidelines for new surgical procedures were introduced by the National Institute for Clinical Excellence (NICE) in 2005. Liposuction for lymphoedema was considered to be a new procedure, resulting in a lengthy delay in the provision of treatment while appropriate authorisation was obtained.

To date, eight patients have undergone liposuction for lymphoedema of the upper limb, with a further seven awaiting surgery, four for upper limb and three for lower limb. Four patients have been referred for pressure garments and massage therapy, and five patients have been declined any surgical intervention. The surgical procedure and postoperative care is identical to the protocol described by Dr Brorson. The mean preoperative volume difference was 1383 (637–2428) mls, with a mean of 1512 (925–2300) mls of fat being removed. Within a few months

postoperative oedema has resolved, resulting in minimal volume difference between the limbs. All patients have been delighted with the results of treatment and would recommend it to others in a similar situation.

In summary, we have shown that it is possible to provide effective treatment for chronic lymphoedema using the liposuction protocol developed in Malmö. We will continue to offer this treatment and further develop an integrated lymphoedema service in Scotland.

## An investigation into the knowledge and opinion of undergraduate physiotherapy and nursing students in relation to the needs of patients with lymphoedema

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**Aim:** An investigation into the knowledge and opinion of undergraduate physiotherapy and nursing students in relation to the needs of patients with lymphoedema.

**Participants:** 85 final year physiotherapy students, 85 final year nursing students.

**Setting:** The University of Birmingham.

**Background:** Considered an underestimated health problem, lymphoedema has a prevalence of 1.33/1000 population (Moffatt et al, 2003) being constantly misunderstood and misdiagnosed by healthcare professionals, and patients report great difficulty in accessing appropriate services (Lam, 2005).

### Methodology:

**Design:** A semi-structured, self-completed postal questionnaire, divided into sections of physiology, causes of lymphoedema, physical manifestations, treatment and

educational issues and ending by asking the participants what significance they place on lymphoedema in relation to other health issues, and what, in their opinion should be the priority for funding.

**Findings:** Using descriptive statistics to demonstrate any nominal or ordinal data and thematic networks (Attride-Stirling, 2001) to analyse the textual data, participants clearly demonstrated some knowledge. Of those participating, only one had been in contact with a patient with lymphoedema, therefore, inference can be made suggesting the application of prior knowledge.

Participants clearly identified the physical manifestations (swelling, skin problems and mobility problems) and psychological issues associated with this patient group.

Thematic analysis demonstrated appropriate treatment strategies and these were confirmed by literature and supported in the literature review.

Participants favoured all aspects of education taking place in undergraduate programmes, indicating a preference for formal tuition followed by observation and participation, therefore, identifying this as a training need, albeit probably an optional one. Participants gave specific consideration to needing to have a basic knowledge base from which to build expertise as postgraduates.

### Conclusion

The low response rate (n=17) made it difficult to consider the study in relation to generalisations to the wider undergraduate healthcare professional population. Objective 3, to determine if there were any differences in knowledge and opinion between the two health

disciplines was not possible to achieve because of the low numbers.

Training needs were identified with particular reference to a basic understanding in order to take part or have an awareness of the holistic care the participants felt this patient group needed, however; it was suggested that training be optional.

#### References

- Attride-Stirling J (2001) *Thematic Networks: An analytic tool for qualitative research. Qualitative Research*. SAGE Publications, London
- Lam R (2005) *Survey of Lymphoedema Support Network Members: their experiences and view*. Lymphoedema Support Network Publications; Quality Print Services, London
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#### Chronic oedema/lymphoedema service mapping project (Scotland)

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Comprehensive treatment services for chronic oedema/lymphoedema (COL) are few in Scotland and there is a lack of coordination between different agencies. A national picture is required to identify current services, gaps in services, inequities and training needs.

**Aim:** To explore current lymphoedema (LO) services in Scotland.

**Methods:** A cross-sectional questionnaire survey, interviews and a focus group. Participants were healthcare professionals treating patients with COL in Scotland. Results are based on 95 questionnaires, 20 individual interviews and a focus group. Ethical approval was not required. R&D approval was obtained.

**Results:** 1. Survey: Respondents were nurses (64.2%; n=61), physiotherapists (27.4%; 26), others (8.5%; 8). 91.4% (85) treated breast cancer-related LO (BCRL); 74.2% (69) LO secondary to other cancers; 34.7% (33) primary LO. Most services were fully funded (73.2%; 60), but 26.8% (22) were unfunded. 57.3% (47)

of respondents had no protected time for LO patients. 24% (20) had a waiting list for referrals; waiting time ranged from 1.5–20 weeks; longest waits were for referral to a specialist clinic. Following assessment, 13% (10) had a waiting list for treatment (6–20 weeks). Only 17% (15) thought treatments for COL in their health board area were adequate. 22.6% (21) had no formal training in treating LO; 8.6% (8) had a diploma; 39.8% (37) were trained to keyworker level. 78.9% (71) had information needs, mostly relating to treatment (30%; 27) and preventing complications (28.9%; 26).

2. Interviews and focus group: Lack of trained staff, services and time were major concerns. Other issues were lack of protected time for LO patients and conflicting demands. The referral pathway was unclear and GPs were criticised for inappropriate and delayed referrals. There were no restrictions on supplies but ordering them could be complicated, often causing lengthy waits for patients and extra appointments. Inequities between services for BCRL and other types of COL were identified.

#### Conclusions

Services to people with BCRL were perceived to be comparatively efficient and sufficient. Services for other types of COL need to be improved. Information provision to professionals and at risk patients needs improving to encourage early symptom recognition and prompt referral. LO services should not be an adjunct to another role, i.e. protected time is needed. Referral guidelines are required. National guidelines for managing COL are required. The process of obtaining supplies and garments needs to be streamlined.

#### Assessment of circulation in lower limb lymphoedema: a nationwide postal questionnaire study

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The assessment of the peripheral vascular circulation in patients with lower limb lymphoedema (LLL) is important for compression treatment. This assessment can be clinically challenging and reliance on pressure measurements is controversial.

We looked at current national practice in the vascular evaluation of these patients in the UK.

**Method:** A postal questionnaire was sent to the lymphoedema nurse specialist members of the British Society of Lymphology (BLS) involved in the management of LLL. The questionnaire's aim was to determine workload, service resources and clinical practice in the vascular assessment of LLL. Responses were analysed by chi-square tests.

**Results:** A total of 110 questionnaires were sent. The response rate was 70%. Respondents worked in a variety of settings (district general hospital = 30%, teaching hospital = 24%, hospice = 24%, primary care = 17%, private = 5%). About 47% of the respondents saw more than 25 new patients per year; with 7.4% seeing fewer than 10. With the accrual, 31.3% had more than 100 patients on their books. There was no significant difference in workload between the organisations ( $p=0.977$ ).

Only 28.6% performed ankle brachial pressure index (ABPI) measurements in the initial assessment. The principle reasons for not doing so were the lack of training and access (33%) and the inaccuracy of ABPI results (30%). Of those who performed ABPI, 14.3%, 28.6% and 57.1% repeated the readings at three, six and 12-monthly intervals respectively.

The majority of respondents rated the value of ABPI as poor (52%) or moderate (39%), with only 9% rating it highly.

Just over half of the respondents seemingly followed some local, regional or BLS guidelines on the vascular evaluation in LLL.

#### Conclusion

A high volume of patients with LLL is managed in various settings by specialist lymphoedema practitioners. ABPI is used infrequently due to a lack of training and resources and inaccurate results. Poor value is attached to this investigation.

The present study indicates lack of standardised assessment of circulation in LLL, especially in patients without vascular symptoms. There is a need to start a debate on the role of ABPI in the management of these patients and to set standards that lymphoedema practitioners can adhere to.

**Subjective oedema: does it exist?**

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Depending on the measurement and technique and the definition of oedema, literature mentions an incidence of arm swelling after axillary lymph node dissection for breast cancer from 10–37%. The subjective sensation of oedema is described in 54% of these patients.

**Aim:** The purpose of this research is to examine whether structural changes occurred in the subcutaneous tissue that could explain these subjective complaints.

**Method:** Two female cadavers with unilateral breast amputation and axillary dissection were studied. The dermal and the subcutaneous layer of both arms were visualised with high frequency ultrasonography, magnetic resonance imaging and spectroscopy and tissue biopsies were taken for histological evaluation.

**Results:** Ultrasound imaging shows a hyperechogenic subcutis and a slightly increased thickness of the dermal and subcutaneous layer. The fat-to-water relationship in adipose cells is higher on the operated side measured by magnetic resonance spectroscopy (MRS). Tissue dissection revealed structural adipose tissue changes, confirmed by microscopic sample evaluation.

**Conclusion**

The complaints that patients have, even if there is no measurable oedema, can be explained by important changes of the subcutaneous tissue. We suggest that these complaints should be taken seriously and that a preventive physiotherapeutic treatment should be standard procedure to prevent these tissue changes.

**Axillary lymphatic massage optimises the sentinel lymph node localisation by blue dye technique**

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Lymphatic mapping using blue dye, radiolabelled colloid or both to identify the sentinel lymph node in breast cancer

surgery is becoming the standard of care. In the validation phase of the ALMANAC trial, surgeons achieving a localisation rate of  $\geq 90\%$  using a combined technique of blue dye and radioisotope proceeded to the randomisation phase in which the success rate for localisation of the sentinel lymph node was 98%.

We report a technique of blue dye alone, which we have developed locally in Stoke-on-Trent, using the axillary and breast massage after subcutaneous injection of 2ml of patent blue dye. This novel massage optimises the localisation of a blue lymphatic duct in the axilla and leads to successful identification of the blue sentinel lymph node.

**Material and methods:** We injected 2ml of 2.5% undiluted blue dye subdermally in the retroareolar area at the upper outer quadrant of the breast. Based upon the principles of manual lymphatic drainage (MLD), the axilla is then massaged to empty the axillary lymph nodes. The next step of massage was from the axilla towards the injection site. The final step is to massage from the injected area towards the axilla to drain the blue dye into axillary lymph nodes.

**Results:** A blue sentinel lymph node was identified in 144 of 168 patients without massage, a localisation rate of 85%. In 167 patients with axillary lymphatic massage technique, the blue sentinel lymph node was identified in 163 patients, thus improving the localisation rate to 97%.

**Conclusion**

Axillary massage, based on the principles of MLD is more effective in combination with a blue dye technique at localising the sentinel lymph node, than injection of blue dye and massage of the breast. This comparative study suggests that with sophisticated imaging it may soon be possible to actually research the efficacy of MLD.

**An audit of the outcomes of multilayer limb bandaging in lymphoedematous limbs**

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Multilayer limb bandaging (MLLB) is offered as an intensive treatment with the intention of reducing limb volume at the end of the treatment.

**Audit aims:** The audit aimed to explore the time course of volume decrease during intensive bandaging and the extent of the reduction at the end of treatment.

**Methods:** Limb volume measurements were recorded, by perometry, after each change of bandage for 47 consecutive patients who received a course of MLLB to an arm or leg unilaterally and also bilaterally to the legs. The duration of treatment ranged from 5–29 days (median 11 days).

**Results:** 96% (45/47) of all patients experienced a reduction in limb volume at the end of the bandaging course. There were statistically significant differences in all three groups, when first and last measurements were compared. For 75% of the group, the greatest reduction in limb volume occurred between the first and second bandaging applications and decreased until it reached a level from which it plateaued, and, in some cases, increased slightly.

Scatter-plots of the results displayed positive relationships between percentage difference (between the control and treatment limb) and total volume loss for the unilateral groups. Subsequent analysis established statistically significant positive correlations, indicating that the greater the initial percentage difference the greater the total fluid loss.

**Conclusions**

This audit has shown that for the majority of patients (45/47) limb volume is reduced at the end of a course of MLLB. For all three groups the percentage and actual differences in limb volume measurements had significantly reduced, thus meeting the treatment standard.

For three-quarters of the sample, the greatest decrease in limb volume occurred between the first and second bandaging application.

It also appears that there is a linear relationship between the initial percentage difference and total fluid loss in unilateral bandaging. Further exploration into this finding is required using a larger sample and undertaken as a research project. 