

Ten case studies on the use of K TWO® in the treatment of chronic lymphovenous oedema

D. Doherty and C. Moffatt, Centre of Research and Implementation of Clinical Practice

INTRODUCTION

A series of 10 case studies were undertaken to evaluate the use of the **K Two**® compression bandage system in the treatment of patients with chronic venous (lymphovenous) oedema secondary to venous disease. All patients were recruited from a community leg ulcer service and a hospital lymphoedema service in South-West London.

METHOD

The study was to determine the reduction in chronic oedema using the **K Two**® system, compared with compression hosiery after a week, wearing a different system on each leg and to evaluate the patient's experience of wearing the **K Two**® system. 10 patients (2 men 8 women), with an average age of 59 years (35 – 73) and who were already receiving treatment with varying types of compression therapy were included in the study. 3 patients did not require hosiery on their 2nd leg. Following full assessment, a standard protocol for measuring and recording sub-bandage interface pressures was used and measurements taken with the Kikuhime pressure monitor. All bandage applications and monitoring were done by the same clinician to ensure consistency. Ankle and calf measurements were taken pre and post bandaging, the difference in the two, determining the reduction in venous oedema.

RESULTS

K Two® was associated with limb volume reduction indicating the removal of chronic lymphovenous oedema. Average reduction at the ankle with **K Two**® was 1.9cm (1.4 – 3.4cm) and 1.4cm at the calf (0.4 – 3.1 cm). Of the 7 patients with hosiery on their 2nd leg, only 3 showed any leg volume reduction averaging 0.2cm at both calf and ankle.

CONCLUSION

KTwo® has the potential to be an effective system for the compression of patients with Lymphovenous oedema with a choice of sizes and widths available. Most patients found this system comfortable and supportive to wear and were able to wear normal footwear, allowing for self-management, particularly for young active patients, with some of the patients wanting to continue with the **K Two**® system. The clinician found it easy to apply.

This study will lead the way in an area where there is currently little clinical evidence available, with a need for more robust evidence such as an RCT confirming clinical efficacy of treatment in this large and challenging patient group.

PATIENT 1

A 59 year old female with a history of osteoarthritis of the knees and previous abdominal surgery had a gradual onset of swelling in both ankles and feet at age 56. Her skin condition is normal with the tissue soft with pitting oedema and negative Stemmer's sign. She is active and has good ankle mobility and experiences discomfort, tingling and a feeling of fullness in the legs. **K Two**® was applied to the left leg with an application pressure of 41mmHg and hosiery to the right leg. After one week in **K Two**®, the left leg showed a reduction in oedema of 2.1cm at the ankle and 3.1cm at the calf with no reduction in the right leg with compression hosiery.



Figure 1 – Before application of **K Two**®



Figure 2 – After treatment with **K Two**®

PATIENT 2

A 35 year old female with swelling of the right ankle and lower leg following traumatic injury 6 months previously has a full range of ankle movements and is very active, however, she experiences tightness and throbbing in the lower part of her leg. Her skin condition and the subcutaneous tissue is soft with pitting oedema and a negative Stemmer's sign. The **K Two**® system was applied to the right leg with a pressure of 40mmHg and hosiery to the left leg. Following one week in **K Two**®, there was a marked oedema reduction of 3.4cm at the right ankle, though no reduction to the calf and only 0.2cm reduction to the left ankle with the hosiery.



Figure 1 – Before application of **K Two**®



Figure 2 – After treatment with **K Two**®

PATIENT 3

A 67 year old gentleman living on his own with medicated hypertension and recent diuretics for heart failure was admitted to hospital 3 months prior to the study with a suspected DVT after his legs became painful and swollen. Venous Doppler showed no evidence of thrombosis and he was discharged after 2 days. The swelling increased in both feet extending from the forefoot to just below the knee with soft pitting oedema and a positive Stemmer's sign. There was no previous history of phlebitis, cellulitis or DVT. Following a week with **K Two**® applied to his right leg (41mmHg application pressure) this gentleman had a reduction of 1.4cm at the ankle and 2.7cm at the calf. Nothing was applied to his left leg.



Figure 1 – Before application of **K Two**®



Figure 2 – After treatment with **K Two**®