COST-EFFECTIVENESS of POLYHEAL in TREATING HARD-to-HEAL VENOUS LEG ULCERS in the UK

INTRODUCTION

An estimated 3-5% of the population aged >65 years will develop a leg ulcer during their lifetime, with the prevalence increasing to 20 per 1,000 population at the age of 80-83 years [3]. Modern dressings used in combination with compression bandaging exhibit venous leg ulcer (VLU) healing rates in the region of 50% at 12 weeks. However, more than 20% remain unhealed after one year [2]. Polyheal is a new and innovative approach to wound healing, comprising a suspension of charged polystyrene microspheres which are applied topically.

This study assessed the cost-effectiveness of Polyheal plus compression bandaging compared to compression bandaging alone in treating hard-to-heal VULs in the UK.

RESULTS

Clinical Outcomes

The model indicates that Polyheal plus compression bandaging is more effective than compression bandaging alone (Figure 2).

- Use of Polyheal plus compression bandaging is expected to lead to a 21% reduction in the requirement for nurse visits (from 43 to 34 per 52 weeks) over the first 12 months after the start of treatment (Figure 3), thereby releasing 9 nurse visits per patient for alternative use within the system.
- The 12-monthly healthcare cost of managing patients with Polyheal plus compression bandaging was estimated to be £3,079 (95% CI: £2,035; £3,504), compared to £2,269 (95% CI: £2,256; £2,280) following use of compression bandaging alone (Figure 4).

Cost-Effectiveness Analysis

- Use of Polyheal plus compression bandaging instead of compression bandaging alone is expected to lead to a cost increase of £81 (95% CI: £778; £823) over 12 months and a 5% improvement in health gain of 0.041 QALYs (95% CI: 0.040; 0.041) at 12 months after the start of treatment.
- Hence, the cost per QALY gained with Polyheal was estimated to be £21,000, at an acquisition cost of £13.50 per week.

At an acquisition cost of £140 per week, use of Polyheal is expected to generate cost neutrality with the annual cost of managing a patient on compression bandaging alone (£2,269).

Sensitivity analyses showed that the relative cost-effectiveness of Polyheal plus compression bandaging is very sensitive to the healing rates in both groups, the acquisition cost of Polyheal and the frequency of Polyheal treatment.

However, the relative cost-effectiveness of Polyheal was less sensitive to changes in other model inputs, such as utility values for health states and number of nurse surgery visits.

Net Resource Implications and Budget Impact

- The current population in the UK is 61.8 million people. Assuming the prevalence of VULs is 0.2%, that would equate to 123,600 people with a VLU per annum. Assuming that 38°C of wounds are long-term non-healing >6 months duration [10], that would equate to ~47,000 people in the UK with a long-term non-healing VLU of >6 months duration.

If all 47,000 patients with a hard-to-heal VLU used Polyheal plus compression bandaging (£140 for a week’s treatment) instead of compression bandaging alone, the expected net impact to the NHS would be cost neutral (£150 2 million) but a 23% reduction in the number of nurse surgery visits (0.5 million) over the first year of treatment from 2.0 to 1.6 million nurse visits.

- Sensitivity analyses were undertaken to identify how the cost per QALY gained with Polyheal plus compression bandaging would change by varying different parameters in the model.

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