**Objectives**

Infantile Hemangioma (IH) is one of the most common childhood benign tumors. Oral corticosteroids were considered first-line therapy of IH for long time, as indicated in national guidelines, until the publication by Léauté et al. showed the efficacy of propranolol in patients affected by IH. Following this discovery, recent studies, including meta-analyses and randomized clinical trials, have demonstrated the effectiveness of propranolol for involution of IH and the better clinical efficacy and safety compared to corticosteroids. The purpose of this study is to estimate the cost-utility of propranolol 3.75 mg/mL oral solution, a new medical product authorized for this specific paediatric indication versus corticosteroids (5.00 mg, tablets), as used in previous clinical practice in absence of other authorized therapies for proliferating IH requiring systemic treatment.

**Methods**

A life-time (30 years) mixed decision tree and Markov model, shown in Figure 1, has been developed to describe the pathway of infants with IH and to assess costs and outcomes (Quality Adjusted Life Years – QALYs – gained) from the perspective of the Italian National Health Service (INHS). Clinical inputs derive from the manufacturer’s pivotal trial and literature review validated by clinical experts in Italy. The economic evaluation considers direct medical costs associated with IH (drug acquisition, hospital admissions and outpatient visits) derived from public sources. Atopic dermatitis was selected as a proxy for IH utilities and the Infants Dermatitis Quality of Life Index and the Children’s Dermatology Life Quality Index were used to estimate utilities. Probabilistic sensitivity analyses (PSA) were performed to investigate model parameter uncertainties. Costs and health benefits have been discounted at an annual rate of 3.00% following Italian guidelines.

**Results**

Total costs, including pharmaceutical and healthcare costs related to propranolol treatment were greater than total costs related to corticosteroids treatment: €2,399.32 versus €1,859.68. On the other hand, the model has calculated that the cumulative QALYs associated with propranolol were equal to 19.11, while the cumulative QALYs associated with corticosteroids were equal to 18.95. Therefore, the corresponding Incremental Cost Utility Ratio (ICUR) was equal to €3,372.75 per QALY gained. The PSA analysis demonstrated that the model is robust and accurate to the variation of the inputs, as showed on the cost-effectiveness plan and on acceptability curve in Figure 2 and Figure 3. The results suggest that 94.60% of the 1000 iterations fall within a €30,000 cost-effectiveness threshold.

**Conclusions**

The propranolol (3.75 mg/mL, oral solution for paediatric use) for the treatment of proliferating IH can be considered cost-effective compared to corticosteroids (5.00 mg, tablets) in the INHS perspective. Even though in Italy a cost-effectiveness threshold is not clearly defined by institutional body, a threshold value equal to €30,000/QALY is commonly accepted and applied in other economic evaluations.