The first step in estimating cost per attack is determining the quantity of units (vials or syringes) required for initial dosing. A weighted average of initial acquisition cost was added to the total cost, factoring in the anticipated need for re-dosing. For products having more than one published re-dosing frequency, the lowest reported frequency was used as a conservative approach. Specific cost estimation formulas address three theoretical patient weight categories: < 40 kg (to reflect small adults or pediatric patients weighing between 10-125 kg). Conclusions: While therapy choices in HAE should be primarily driven by clinical factors and patient preferences, cost of treatment can be an important consideration if multiple options are considered equally appropriate. The formulas presented provide a simple, objective means of quickly comparing direct product costs for treating an HAE attack using local pricing figures.

Method
Simple cost estimation formulas that factor in the non-static variables of body weight and re-dosing potential for acute attacks were developed based on official prescribing recommendations and published clinical study data; costs of injection/equipment were not included and would be expected to contribute little difference between the products.

The two major determinants of HAE treatment costs per product considered in the formulas are product weight and re-dosing potential per attack.

1. Patient body weight - The cost-estimation formulas were designed to encompass three theoretical patient weight categories: < 40 kg (to reflect small adults or pediatric patients), a standard 75 kg adult, and obese patients weighing between 100-125 kg. Dose recommendations are body weight-based for pnfC1-INH and icatibant. Dose recommendations for rNC1-INH are body weight-based for patients 44 kg and fixed dose for patients ≥ 44 kg (Table 1).

2. Re-dosing potential - The formulas were weighted according to the potential need for re-dosing based on published rescue medication rates, with the lowest set at 1% for pnfC1-INH, 9% for icatibant, 12% for ecallantide, and 9% for rhC1-INH.

The additional cost to account for potential re-dosing is determined by multiplying the acquisition cost of the initial dose by a factor that conservatively reflects percentage of attacks that may require re-dosing. This extra cost is added to the cost of the initial dose. The formula is shown here in simplified form:

\[ \text{Attack treatment cost} = AC + (AC \times \text{RD\%}) \]

Where AC = acquisition cost/ dose, RD = re-dosing

**Table 3** presents specific formulas for each of the HAE products, including a breakdown by body weight category for those products that are dosed according to weight:

**Table 3.** The following hypothetical example illustrates the use of the formula to estimate the treatment cost of a product having an acquisition cost of $500 per unit (e.g., vial or syringe), with a unit re-dosing factor of 4X:

- Re-dosing attack cost = $5000 x (4X) x 0.12 = $1150

The user's individualized acquisition costs for product vials and syringes are inserted into the formulas in Table 3 (calculated twice).

**References**