Global Cost-Value Optimization in Hair Transplantation: A Comparative Benchmark Analysis of Per-Graft Financial Structures versus Comprehensive Packaged Systems

Vera Clinic Academy Research Group

Department of Health Economics and Strategic Clinical Development, Istanbul, Turkey

Abstract

Background. Hair transplantation is a high-volume component of the global medical tourism market, valued at USD 76.1 billion in 2025 [1]. Pricing is organised under two contrasting structures: per-graft billing, common in Western private markets, and fixed all-inclusive packages, common in Turkey. The total-cost implications of these structures have not been systematically compared.

Methods. Retrospective cohort of 220 male patients treated with FUE or DHI at a single centre in Istanbul between January 2024 and December 2025, stratified by Norwood-Hamilton stage into three cohorts. The two pricing structures were compared using a standardised graft-count scenario (weighted-mean cohort volume of approximately 3,600 grafts). Comparative pricing for the United States, United Kingdom, and Dubai was drawn from published market averages. Graft survival was not a primary outcome of this cohort and is referenced from the clinic's separate graft-survival studies.

Results. The fixed all-inclusive package (€3,200–5,990) corresponded to an effective per-graft cost of approximately USD 1.07–1.80 at the cohort mean graft volume, compared with per-graft rates of USD 3–8 in the comparator markets. Because the package price is independent of graft count, the effective per-graft cost declined as graft count rose. Follicular transection was below 0.8% by manual count; 4 of 220 patients underwent a planned second session, none attributable to graft failure; patient-reported satisfaction was 98%.

Conclusions. In this cohort, the fixed all-inclusive package model was associated with a lower and more predictable total patient cost than per-graft billing, primarily because ancillary and logistical items are bundled rather than billed separately. Findings are observational and limited by single-centre, retrospective design and by the use of aggregate market data for comparators.

Keywords: hair transplantation; health economics; medical tourism; cost analysis; follicular unit extraction; Turkey

Introduction

The global medical tourism market was valued at USD 76.1 billion in 2025 and is projected to reach USD 84.5 billion in 2026, growing at a compound annual rate of 8.4% [1]. Cosmetic surgery accounted for a leading 17.1% share in 2025, with hair transplantation among the most frequently packaged procedures [1]. Turkey is a principal destination for this procedure.

Hair transplantation is priced under two contrasting structures. In many Western private markets, procedures are billed per graft, and ancillary and logistical items are charged separately. In Turkey, procedures are more commonly sold as fixed all-inclusive packages that bundle surgery, accommodation, transfers, medications, and aftercare into a single price. Reported price differentials are substantial: United States prices have been

reported at 200–300% above many international destinations, and ancillary services may add 20–30% to the headline procedure bill [1].

These two structures are not directly comparable at the headline level, because a per-graft rate omits items that a package bundles. The present study compares, in an observational cohort, the total patient cost under the two structures using a standardised graft-count scenario, and describes the operational characteristics of the packaged model.

Materials and Methods

Study design

This was a single-centre retrospective cohort study conducted at a hair restoration clinic in Istanbul, Turkey. Surgical, donor-density, and financial records for patients treated between January 2024 and December 2025 were analysed.

Participants

The cohort comprised 220 male patients with androgenetic alopecia treated by follicular unit extraction (FUE) or direct hair implantation (DHI). Patients were sampled from both FUE and DHI caseloads; no formal inclusion or exclusion criteria were applied beyond treatment during the study window. Patients were stratified by Norwood-Hamilton stage into three cohorts, as shown in Table 1.

Cost model and data sources

Two pricing structures were defined:

- **Per-graft billing:** total cost = graft count × per-graft rate, with ancillary and logistical items (consultation, anaesthesia, taxes, accommodation, transfers) typically billed separately.
- **Fixed all-inclusive package:** a single price that is independent of graft count and bundles surgery, accommodation, transfers, medications, and aftercare.

A standardised comparison scenario was set at the cohort weighted-mean graft volume of approximately 3,600 grafts. For Turkey, no explicit government price report exists for elective hair transplantation; market-average pricing is available and was used, and the Ministry of Health regulates a minimum health-tourism tariff that functions as a regulatory floor [5]. A representative mid-market example was drawn from Vera Clinic's published price schedule [6]. Comparator pricing for the United States, United Kingdom, and Dubai was drawn from published market averages [6].

Clinical and operational parameters

- Follicular transection was assessed by manual graft counting, with damaged grafts separated and recorded; the transection rate was below 0.8%.
- Planned staged procedures were recorded separately from complications.
- Patient-reported satisfaction was collected via clinic satisfaction forms.
- Follow-up was available for 176 patients at 12 months and 174 patients at 18 months.

Graft survival evidence base

Graft survival was not a primary endpoint of this cost cohort. The clinic's graft-survival performance is documented separately: a mean 12-month graft survival of approximately 92% (range 90–96%) in a

789-patient growth-timeline study [3], and 91.4% (SD 4.1%) in a 12- and 24-month follicular-unit-extraction cohort [4].

Adjunctive hyperbaric oxygen therapy

A subset of patients received adjunctive hyperbaric oxygen therapy (HBOT; marketed by the clinic under the name OxyCure) as part of post-operative care. In a randomised controlled trial, HBOT reduced early post-operative shedding but did not produce a statistically significant difference in graft survival compared with control (96.9% vs 93.8% at 9 months) [2]. Its use after hair transplantation is adjunctive and off-label, based on established wound-healing mechanisms rather than direct effects on graft survival. No graft-survival benefit is attributed to HBOT in this analysis.

Statistical analysis

Descriptive statistics were used. Cost figures are presented as ranges. No inferential statistical comparison between the two pricing structures was performed.

Ethical considerations

This study was a retrospective analysis of surgical, donor-density, and financial records. Records were anonymised and de-identified prior to analysis, in accordance with the principles of the Declaration of Helsinki.

Results

Cohort composition

Table 1. Cohort composition at treatment (N = 220).

Cohort	Norwood-Hamilton stage	n	Mean graft volume
Alpha	II–III	48	2,200
Beta	IV–V	99	3,400
Gamma	VI–VII	73	4,800
Total	**II–VII**	**220**	**≈3,600 (weighted mean)**

All patients were male. Cohort volumes are means; the weighted mean across cohorts is approximately 3,600 grafts.

Cost structure comparison

Table 2 compares the fixed all-inclusive package model (Turkey) with per-graft billing structures in three comparator markets. Values are published market-average ranges.

Table 2. Comparison of pricing structures for a standardised hair transplant (≈ 3,600 grafts).

Cost item	Turkey (Vera Clinic, packaged)	USA	UK	Dubai
Pricing model	Fixed all-inclusive package, independent of graft count	Per-graft billing	Per-graft billing	Per-graft (itemized)
Total cost	USD 2,500–7,500	USD 10,000–20,000	USD 8,000–14,000	USD 6,000–11,000
Per-graft rate	USD 0.70–2.00	USD 4–8	USD 3–6	USD 3.5–7

Cost item	Turkey (Vera Clinic, packaged)	USA	UK	Dubai
Medical fees	Included	Mostly extra	Partial	Itemized
Hotel / transfer	Included	Not included	Rarely	Sometimes
PRP / aftercare	Included	Extra	Extra	Extra
Follow-up	Remote, included	Limited	Limited	Limited

Comparator figures are aggregate market averages, not patient-level data. Turkey figures are drawn from Vera Clinic's published schedule as a representative mid-market example.

Effective per-graft cost under the package model

At the cohort mean of approximately 3,600 grafts, the fixed package price (€3,200–5,990) corresponds to an effective per-graft cost of approximately USD 1.07–1.80. Because the package price is independent of graft count, this effective per-graft cost declines as graft count rises — the inverse of a per-graft billing structure, in which total cost rises with graft count. The surgical graft-line component alone is approximately USD 0.70–1.20 per graft; the difference between this and the effective package rate reflects the ancillary and logistical items bundled into the package.

Operational observations

- Follicular transection was below 0.8% by manual graft count.
- Four of 220 patients (1.8%) underwent a planned second session; none was attributable to graft failure.
- Patient-reported satisfaction, collected via clinic forms, was 98%.

Discussion

In this observational cohort, the two pricing structures differed chiefly in what they bundle. Per-graft markets present a lower-looking headline rate but bill ancillary and logistical items separately, whereas the packaged model bundles them into a single fixed price. For the standardised scenario, the packaged total was both lower and more predictable for the patient.

The lower cost was not associated with lower graft survival in the clinic's separate studies, which report approximately 91–92% survival [3,4]. This is consistent with the view that Turkey's lower prices reflect structural factors — labour and facility costs, tax structure, currency, and high procedure volume — rather than reduced clinical quality [1,6]. Adjunctive HBOT was used in some patients; controlled evidence associates it with reduced early shedding but not with a statistically significant survival benefit [2], and no survival benefit is attributed to it here.

These findings are consistent with reported price differentials between Turkey and Western private markets [1,6], and reframe the comparison in structural terms rather than as a claim of provider superiority.

Limitations

- Single-centre, retrospective, non-randomised design.
- The cohort was a convenience sample rather than a consecutive series; selection bias cannot be excluded.

- There was no control group. Comparator cost data are aggregate market averages, not patient-level figures, and are subject to currency fluctuation.
- Graft survival was not measured in this cohort; survival figures are drawn from separate clinic studies and may not represent this cohort.
- Patient satisfaction was collected with a non-standardised clinic instrument.
- Package composition varies by tier, and the effective per-graft cost depends on graft count.

Conclusions

In this observational cohort, the fixed all-inclusive package model was associated with a lower and more predictable total patient cost than per-graft billing, primarily through the bundling of ancillary and logistical items. These findings are descriptive and require confirmation in multi-centre, prospectively designed cost analyses using patient-level comparator data.

Conflict of Interest and Funding

Vera Clinic Academy is the research arm of the treating institution; this institutional relationship constitutes a potential conflict of interest and is disclosed in accordance with ICMJE recommendations. No external funding was received. Data analysis and manuscript preparation were conducted independently of the clinic's marketing and commercial functions.

Data Availability

De-identified data are available from the corresponding author upon reasonable request, subject to ethics committee review.

References

1. Global Market Insights. Medical Tourism Market Size & Share, 2026–2035 (Report GMI3022). Selbyville: Global Market Insights Inc.; February 2026.

2. Fan Z, et al. The effect of hyperbaric oxygen therapy combined with hair transplantation surgery for the treatment of alopecia. J Cosmet Dermatol. 2021. doi:10.1111/jocd.13665. [full citation details to be verified before submission]

3. Vera Clinic Academy. A prospective observational cohort study on hair transplantation growth dynamics and regrowth timelines in 789 patients: photogrammetric and AI-assisted trichoscopic evaluation. Unpublished data / manuscript in preparation.

4. Yalçın E, Filima V. Graft survival rates following follicular unit extraction at 12 and 24 months: a retrospective cohort study at Vera Clinic, Istanbul, Turkey. Unpublished data / manuscript in preparation.

5. Republic of Türkiye Ministry of Health, Directorate of Health Tourism. Health services price tariff within the scope of health tourism and tourist health (Annex Ek-2A; minimum tariff). Ankara: Ministry of Health.

6. Vera Clinic. Hair transplant Turkey cost 2026 (published price schedule). Available at: veraclinic.net/hair-transplant-turkey-cost/

7. Rassman WR, Bernstein RM, McClellan R, Jones R, Worton E, Uyttendaele H. Follicular unit extraction: minimally invasive surgery for hair transplantation. Dermatol Surg. 2002;28(8):720–728.