

DIRECT TREATMENT COSTS OF STROKE IN TURKEY

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INTRODUCTION

•Stroke is the second leading cause of death globally and survivors of stroke are faced with long-term disability.

•Aging population, hypertension, factors related with lifestyle and atrial fibrillation are among the main causes of stroke and as such, it is the problem both in high and also middle and low-income countries.

•Stroke survivors are also under the risk of recurrent strokes causing a potential burden on health care systems. Therefore, cost of stroke studies are of special importance to healthcare policy makers in order to make evidence based policies.

OBJECTIVE

• The aim of this study was to determine the direct cost of stroke from the payer perspective in Turkey.

METHODOLOGY

•A multi-dimensional approach was used to estimate the direct costs of stroke in Turkey.

•First a large dataset covering 4 years data for 1921 inpatients in the neurology department of a University Hospital was analyzed. The data set covered information on the severity of the disease, socioeconomic status of the patients and also the medical procedures applied during the hospital stay.

•Second, the actual invoices of the patients in 2014 were analyzed.

•Third, a form was designed to explore the treatment strategies, medical procedures and resource requirements of stroke outpatients and inpatients.

•The form was applied to an expert panel and the resources determined by the panel were priced by the Social Security Institution's official price list.

INPUTS OF THE MODEL

• Pricing and reimbursement prices data are obtained from Ministry of Health Drug Price List and the Price List of SSI Health Implementation Guideline

Table 1. Outpatient and Monitoring Cost of Stroke – Expert Opinion (annual cost per patient)

	Cost (TL)*
Outpatient Visits and Costs	515,04
Drug Cost	1.292,55
Total	1.807,58

* TL: Turkish Lira

This study was sponsored by Boehringer Ingelheim

Table 2. Inpatient Costs – Expert Opinion (annual cost per patient)

	Cost (TL)
Intensive Care Cost	4.002,75
Hospitalization and Test Cost	1.143,03
Drug Cost	490,74
Total	5.636,52

Table 3. Total Cost of Stroke Per Patient – Expert Opinion (annual cost per patient)

	Cost (TL)
Outpatient and Monitoring Cost	1.807,58
Inpatient Cost	5.636,52
Total Cost	7.444,11

Table 4 . Total Cost of Stroke Per Patient – Retrospective Data Analysis (annual cost per patient)

	Average (TL)	Standard Deviation	Median	Min	Max
Emergency	442	620,4	328,2	4,80	4.442,5
Service	3.790	9.187,5	1.533,0	11,94	70.000,4
Intensive Care	12.564	20.167,1	3.847,0	15,50	100.838,9
Other	2.942	5.815,6	63,9	15,50	20.052,9
Total	5.561	13.575,6	1.222,4	4,80	100.838,9

RESULTS

•According to the expert panel results, annual outpatient and monitoring costs were 1.807,58 TL and intensive care and inpatient costs were 5.636,52 TL. The total annual cost of stroke per patient was calculated as 7.444,11 TL in Turkey.

•According to the retrospective data analysis, the annual inpatient cost per patient was 5.561 TL. This result is in par with the estimations based on expert panel. However, the subgroup analysis revealed that the cost per patient with atrial fibrillation was 12.675TL indicating that atrial fibrillation is an important factor to be considered.

CONCLUSION

•The study showed that stroke direct medical costs had a significant economic burden on the healthcare budget.

•Outpatient and monitoring costs constituted %24 of total costs whereas inpatient costs constituted %76 of total costs.

•Atrial fibrillation should be considered as an important risk factor for cost increases.