

Calculation of a justified Price for Tafamidis

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Use only with citation: <https://docfind.ch/FDPM.pdf>

Introduction

Tafamidis is used for the treatment of transthyretin amyloid cardiomyopathy¹ and has several beneficial effects by reducing all-cause mortality, hospitalizations, and side effects of the disease (despite active medication). The pricing of Tafamidis can be modelled in terms of clinical and social effects. As a rule, health economic models are carried out using QALY (quality adjusted life-years), whereby the inherent problems of QALY are enormous and lead to incorrect conclusions when assessing the value of medicines. In particular, the quality of life of relatives, the value of life and the social costs of a disease are not considered².

Recently, a Swiss Drug Pricing Model has been published using Tafamidis as an example³ (Niklaus Meier, Mark Pletscher, Institut für Gesundheitsökonomie und Gesundheitspolitik, Departement Gesundheit, Berner Fachhochschule, Bern contact: niklaus.meier@bfh.ch). Authors must be congratulated for their effort, because they introduce a monetarization of lost life years. However, other important factors such as loss of life quality of relatives and indirect disease costs remain unaddressed. They concluded, that a justified price for Tafamidis would be CHF 2'987.75 per month (30 capsules). In view of the actual price of CHF 9'975.05 there would be an overpricing of 70%.

Because authors invited stake holders to comment on their economic model, which should serve as a Swiss Drug Price Model in the future, we developed a price finding calculator for Tamidis on behalf of the Foundation for Fairness in Healthcare⁴.

¹ <https://www.nejm.org/doi/full/10.1056/NEJMoa1805689>

² <https://qaly.ch>

³ <https://www.bfh.ch/.documents/ris/2021-845.495.696/BFHID-21804369-3/Publikation%20zu%20Swiss%20Drug%20Pricing%20Model%20%E2%80%93%20Ein%20Modell%20zur%20Berechnung%20wirtschaftlicher%20Preise%20neuer%20Therapien%20in%20der%20Schweiz.pdf>

⁴ <https://fairfond.ch>

FDPM Model assumptions

Model assumptions are described in detail in an excel sheet⁵. In brief, we used the following parameters, partially overtaken from the SDPM. FDPM=Fairfond Drug Price model

Number of patients	1 000
Time horizon years	1.00
Cost of Drug per year CHF	121 496
VSLY (3x BIP per person in Switzerland) CHF	270 660
Life years lost per death	1.80
cost per hospitalisation CHF	10 000
cost BSC minus hospitalization placebo	6 251
cost BSC minus hospitalization verum	4 688
Price correction Canada to Switzerland in %/100	0.25
Innovation cost per patient and year CHF	15 000
Deduction per % side effect reduction CHF	1 000
Deduction per % side effect reduction Life qual patient	1 000
Deduction per % side effect reduction Life qual all relatives	1 000
Discount rate % in 1st year	0.00
Overprizing of Tafamidis in %	41.65

⁵ <https://docfind.ch/FDPM.xlsx>

Results

FAIRFOND DRUG PRICE MODEL			
Tafamidis 30 caps cost per month			9 975.05
Options for deductions			
Side effect reduction % + better quality of life pat/relatives (each 1 000)			3 000
Side effect reduction % (study observation, no option)			6.88
Innovation cost per patient per year			15 000
Higher Swiss Cost compared to Canada %/100			0.25
VSLY (3x BIP / person in CH)	90 220	3	270 660
Result: justified cost for Tafamidis per month			5 820
Acutal prize minus justified prize = overprizing per month			4 155
Acutal prize minus justified prize = overprizing per year			50 605
Per 1000 treated			
Modell FDPM	VERUM	PLACEBO	DEDUCTION
Cost BSC per year (BSC=best supportive care)	16 251	16 251	
Effect BSC minus 10 000 Hosp	4 688	6 251	
Hospitalisation per year per 1 000 (=10 000 CHF)	190	220	
Cost Hospitaliations per patient	10 000	10 000	
Number of patients	1 000	1 000	
Cost Hospitaliations per year	1 900 826	2 198 254	297 427
Cost BSC per year	12 892 461	17 189 948	4 297 487
Mortality per 1000 per year	107	156	
Lost lifes per year		49	
Duration of effect in years	2.8	2.8	
Mortality	295	429	
Lost life years 1.82		89	
Cost of life per year	270 660	270 660	
Cost of lost lifes per year		13 181 042	
Cost of lost lifes		23 989 497	23 989 497
Cost total Care			28 584 411
Cost of medication per year per patient		121 496	
Cost of medication per year per group		121 496 109	
Cost of medication per group 2.8 years		334 114 300	
Cost total Medication		334 114 300	
Cost per patient per year		121 496 109	92 912
Tafamidis caps per month/year		9 975.05	121 496
Deductions CHF 3 000 per 1% difference side effects	3 000		
Reduction Sideeffects	6.88		
Reduction Sideeffects 9% per 1000 treated/year	20 646		20 645 749
Innovation cost 15000 per patient	15 000		15 000 000
Higher Cost than Canada 25% for direct/indir cost	0.25		2 148 743
Indirect cost = direct cost			4 297 487
Sum of cost savings per 1 000/year			70 890 798
Cost per patient per year			50 605
Justified cost per patient			5 820

Discussion

In contrast to SDPM (Swiss Drug Price Model), we find in our FDPM (Fairfond Drug Price Model) a justifiable price of CHF 5'820, which is showing that the official price of 9'975.05 per month is still over-priced by 42%. However, inclusion of important effects from saved lives and associated costs as well as a monetarisation of side effects and the associated loss of quality in life for both patients and relatives has led to an increase of the Tafamidis value of CHF 2'833, which is a near 50% increase when compared to SDPM.

Importantly, our model allows to vary the input values and observe cost-effects immediately, which adds to the idea, that price finding activities should be a dynamic process based on real assumptions and the willingness to pay.

Traditionally, cost models in health economy are reduced to pure patient effects, thus scotomising the fact, that every patient is embedded socially within family, work, and social activities. Our FDPM Model tries to implement such factors and is open for discussion and it remains open, how far the FDPM model can be generalised for other drugs.

Our model concept is very transparent and allows immediately to calculate justified drug costs. When we use input function with no monetarisation of VSLY, effects of life quality of relatives and the cost of side effects (just leaving life quality of the patient as the main input variable), we find a drug price of CHF 1'315. This shows the enormous social effects of drugs and underscores the importance to rate the value of drugs beyond QALY.

The consistent underestimation of the social value of health by previous health economic models has also contributed to the image of allegedly excessive pricing by the pharmaceutical industry and led to the image of toxic prices.

The policy of window pricing aims to make the value of medicines transparent to the public. However, overpricing, as is now the case with Tamidis, is unlikely to reduce resentment about pricing. It would therefore make sense for the pharmaceutical industry to abandon this policy and communicate the actual prices, which are often significantly lower due to discounts.

It is our understanding that the price actually paid for Tamidis, although unknown, is within the range of what we consider to be a fair price.

Conclusion

In contrast to SDPM, FDPM offers a more comprehensive way to assess and monetarise beneficial treatment effects from drugs and does explicitly avoid the need to use QALY. Window pricing should be abandoned and cost effects of drugs should be realistic: by inclusion of the social value of drugs.