

# Influence of the difference in discounted price between biosimilar and originator product

Sweden's infliximab and etanercept market

**Evelien Moorkens**, Steven Simoens,  
Per Troein, Paul Declerck, Arnold Vulto,  
Isabelle Huys



## ***Conflict of interest statement***

- I am a PhD researcher employed full-time by the University of Leuven
- I have no conflicts of interest to declare.

# Background

- Economic theory suggests increased uptake with lower price, BUT...

Rémuzat et al. 2017

significance threshold of  $p < 0.05$ . The biosimilar price discount over original biologic price, the number of analogues, and the distribution channel were not correlated with the biosimilar uptake, with p value respectively equal to 0.78, 0.50, and 0.33. Therefore, these three variables have no impact on biosimilar uptake.

IQVIA 2018

The correlation between biosimilar volume market share of the total market and price reduction (at list price level) of the total market is weak, as can be seen by the established biosimilar classes.

# Aim & setting

- Study effect of actual price differences between originator and biosimilar on biosimilar uptake
- Sweden: Decentralized system → 21 regions with county council
- Differences in organization of inpatient and outpatient setting

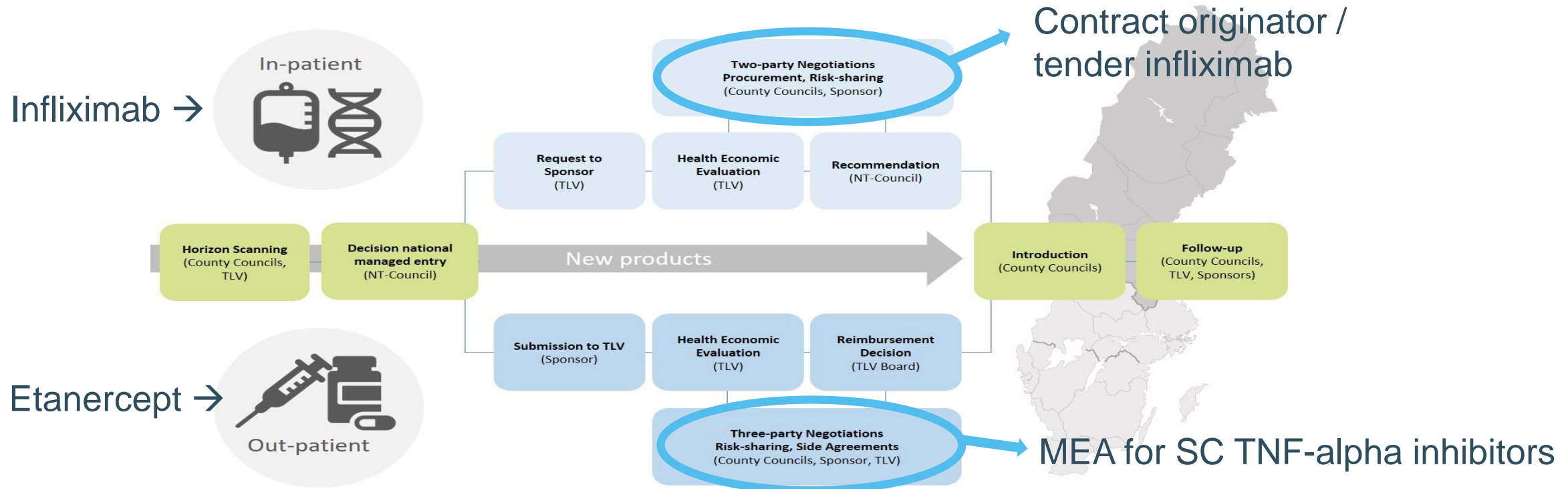


Figure from: Gustaf Befrits

# Methods

- DDDs per region for infliximab and etanercept from IQVIA (Q2 2012 to Q4 2017)

## Infliximab

**Discounted expenditure** from IQVIA

→ **Regression analysis** of biosimilar infliximab market shares on % difference in discounted price per DDD for 2017

## Etanercept:

**Calculation of rebated national prices** per vial at 1 October 2017 based on conference presentation

→ **Estimation of actual costs** for regions and government for existing **gainsharing agreement** (regions: 60%, government 40%)

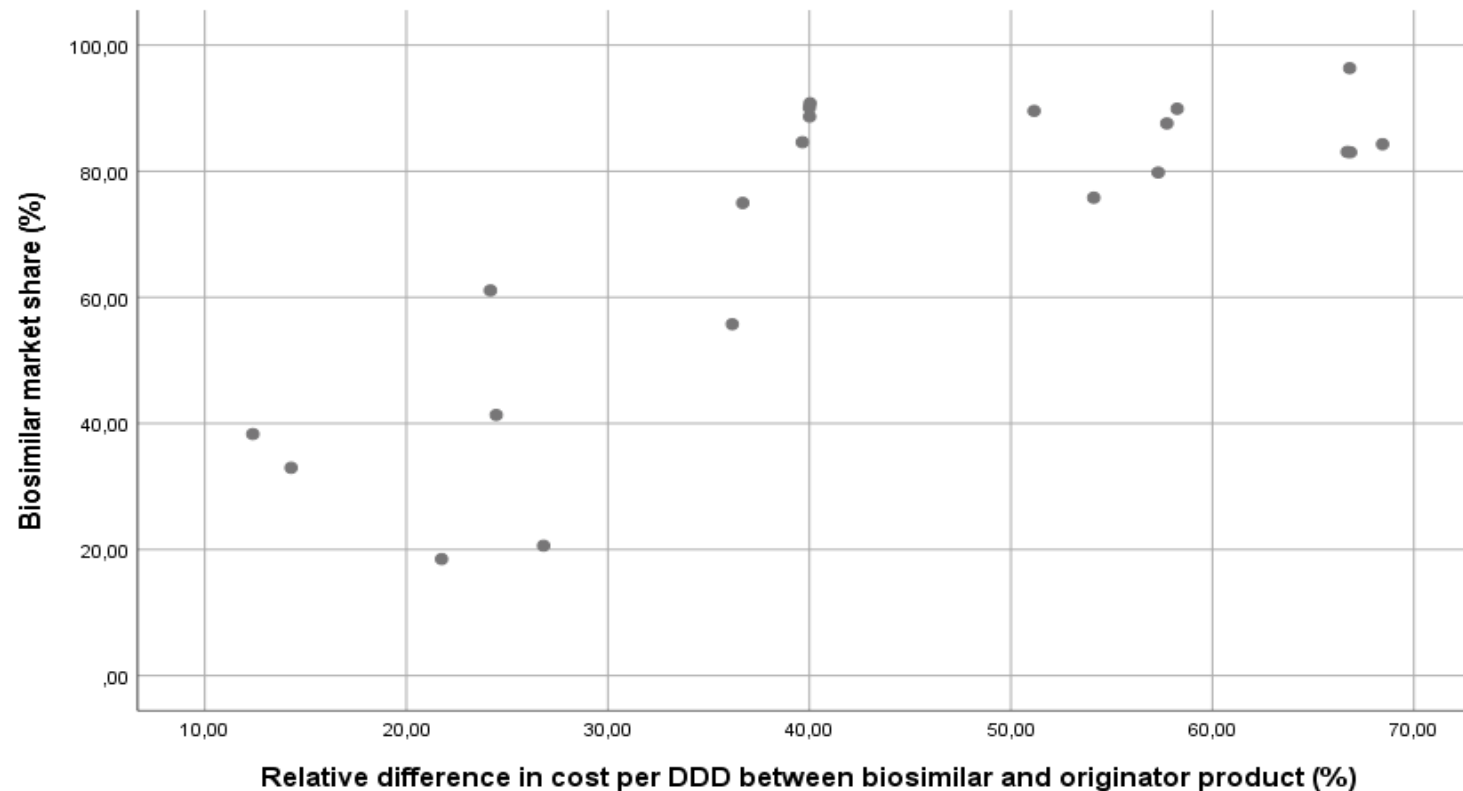
## Results: Infliximab – Biosimilar market shares

- Wide variation in biosimilar market shares between counties: **23-94% in 2017 Q4**
- Initial uptake of biosimilar slow due to (rebate) contracts for originator

County	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4
Västmanlands	0%	1%	4%	7%	5%	5%	8%	15%	16%	15%	20%	23%
Uppsala	0%	1%	1%	5%	6%	7%	8%	8%	16%	20%	22%	25%
Östergötlands	2%	6%	9%	17%	14%	15%	16%	23%	30%	33%	33%	36%
Västra Götalands	0%	2%	2%	9%	8%	11%	10%	16%	22%	41%	42%	47%
Gävleborgs	0%	0%	0%	2%	0%	14%	5%	25%	31%	42%	46%	50%
Kalmar	4%	9%	5%	5%	5%	7%	5%	8%	34%	68%	66%	73%
Blekinge	15%	23%	24%	21%	23%	20%	33%	59%	74%	76%	76%	77%
Kronobergs	0%	6%	7%	17%	36%	79%	94%	84%	85%	84%	82%	81%
Västernorrlands	0%	0%	0%	5%	3%	6%	12%	78%	85%	86%	84%	83%
Stockholms	0%	3%	6%	17%	18%	21%	23%	23%	80%	84%	87%	86%
Hallands	0%	8%	8%	43%	66%	61%	62%	66%	77%	85%	84%	87%
Dalarnas	0%	5%	1%	6%	5%	11%	12%	13%	15%	34%	67%	87%
Värmlands	1%	7%	12%	23%	93%	90%	89%	90%	88%	89%	85%	88%
Örebro	0%	0%	6%	16%	20%	39%	55%	58%	62%	81%	88%	89%
Södermanlands	0%	1%	7%	13%	30%	90%	92%	91%	89%	91%	90%	90%
Jönköpings	0%	0%	1%	3%	3%	3%	5%	9%	37%	88%	84%	90%
Västerbottens	0%	0%	8%	7%	3%	7%	8%	71%	94%	90%	88%	91%
Jämtlands	0%	2%	0%	7%	19%	16%	13%	91%	90%	85%	94%	91%
Skåne	2%	8%	19%	53%	72%	84%	87%	88%	89%	88%	90%	92%
Norrbottnens	0%	1%	2%	5%	11%	6%	6%	59%	80%	92%	91%	92%
Gotlands	0%	0%	5%	20%	4%	25%	13%	21%	98%	98%	96%	94%

## Results: Infliximab – Regression analysis

- Threshold 40% difference → biosimilar infliximab market shares of 79% or more
- Relative difference to originator in discounted price explains 59% of variation in biosimilar infliximab market shares in 2017



## Results: Etanercept – Biosimilar market shares

- Wide variation in biosimilar market shares between counties: **30-83% in 2017 Q4**
- Prescription provided for a year: Active pull-back or wait?

County	Biosimilar least expensive						Originator
	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4
Dalarnas	48%	71%	82%	83%	82%	83%	30%
Västra Götalands	5%	16%	26%	32%	39%	44%	43%
Uppsala	6%	21%	36%	50%	56%	59%	52%
Hallands	1%	5%	14%	32%	56%	59%	55%
Västernorrlands	5%	9%	50%	64%	75%	71%	58%
Norrbottnens	4%	14%	49%	57%	64%	59%	58%
Stockholms	7%	22%	37%	49%	59%	65%	62%
Gävleborgs	4%	14%	24%	38%	56%	63%	62%
Jämtlands	8%	56%	72%	74%	83%	84%	64%
Östergötlands	15%	33%	53%	65%	67%	75%	65%
Skåne	7%	15%	24%	44%	61%	72%	66%
Kronobergs	4%	12%	20%	33%	60%	70%	68%
Västerbottens	8%	12%	47%	65%	69%	75%	69%
Västmanlands	4%	17%	43%	70%	81%	87%	70%
Gotlands	15%	44%	64%	69%	78%	75%	70%
Örebro	3%	5%	29%	63%	71%	74%	73%
Jönköpings	9%	36%	58%	72%	86%	88%	76%
Kalmar	11%	36%	52%	66%	76%	82%	76%
Blekinge	14%	49%	80%	81%	81%	77%	76%
Värmlands	8%	27%	68%	77%	79%	81%	77%
Södermanlands	9%	34%	51%	72%	82%	91%	83%



## Results: Etanercept – Cost estimation

Product	List price per vial <sup>a</sup>	Estimated rebate <sup>a</sup>	Estimated rebated price <sup>a</sup>	Estimated savings county <sup>a, b</sup>	Estimated savings government <sup>a, c</sup>	Estimated cost county <sup>a</sup>	Estimated cost government <sup>a</sup>
<b>Originator</b>	2370						
<b>Biosimilar 1</b>	1514						
<b>Biosimilar 2</b>	1514						

<sup>a</sup>: in Swedish Krona

<sup>b</sup>: 60% of savings (rebate) for the county council in gainsharing agreement with government

<sup>c</sup>: 40% of savings (rebate) for the government in gainsharing agreement with county councils

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<b>Originator</b>	2370	1540 (65%)	830				
<b>Biosimilar 1</b>	1514	0 (0%)	1514				
<b>Biosimilar 2</b>	1514	0 (0%)	1514				

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<b>Originator</b>	2370	1540 (65%)	830	924	616		
<b>Biosimilar 1</b>	1514	0 (0%)	1514	0	0		
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<b>Originator</b>	2370	1540 (65%)	830	924	616	1446	1754
<b>Biosimilar 1</b>	1514	0 (0%)	1514	0	0	1514	1514
<b>Biosimilar 2</b>	1514	0 (0%)	1514	0	0	1514	1514

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# Conclusions

- Drivers and enablers to leverage competition from biosimilars

→ In Sweden, higher biosimilar market shares with increasing differences in discounted price

Drivers		Enablers
<b>Quantitative study:</b> <ul style="list-style-type: none"><li>○ Difference in discounted price per DDD between biosimilar and originator product</li></ul>	<b>Qualitative study:</b> <ul style="list-style-type: none"><li>○ Difference in discounted price per DDD</li><li>○ Key opinion leaders</li><li>○ Local guidelines</li><li>○ Gainsharing</li></ul>	<ul style="list-style-type: none"><li>○ Multi-stakeholder approach</li><li>○ Altruistic attitude</li><li>○ Good communication with colleagues</li></ul>

# Thank you!

## Contact

Evelien Moorkens  
Clinical Pharmacology & Pharmacotherapy  
KU Leuven

[evelien.moorkens@kuleuven.be](mailto:evelien.moorkens@kuleuven.be)

