

Price comparison of high-cost medicines 2017

Brief report

Commissioned by the Federal Ministry of Labour, Social Affairs, Health and Consumer Protection

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The views expressed in the publication are those of the authors and not necessarily those of the commissioning institution.

Vienna, July 2018

Commissioned by the Federal Ministry of Labour, Social Affairs, Health and Consumer Protection

Citation: Vogler, Sabine; Schneider, Peter; Zimmermann, Nina; Zuba, Martin (2018):
Price comparison of high-cost medicines 2017 – Brief report. Gesundheit Österreich (Austrian
Public Health Institute), Vienna

Owner, editor und publisher: Gesundheit Österreich GmbH (Austrian Public Health Institute),
Stubenring 6, 1010 Vienna, tel. +43 1 515 61, Website: www.goeg.at

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Abstract

Aim

The study aims to analyse Austrian prices of high-cost medicines in comparison to other European Union (EU) Member States.

Methods

Medicine price data of all 28 EU Member States were collected through the Pharma Price Information (PPI) service maintained by the Austrian Public Health Institute. Data were surveyed as of September 2017. The survey included 100 high-cost medicines in Austria that were selected based on information about top-selling medicines provided by the Main Association of Austrian Social Security Institutions (outpatient sector) and the Board of the Austrian Association of Hospital Pharmacists (inpatient sector). Ex-factory prices were analysed for all 100 selected medicines. In addition, analyses of further price types (pharmacy purchasing price and pharmacy retail price) were performed for the 60 outpatient medicines surveyed.

Results

At the ex-factory price level, price data were available for 82 percent and 69 percent of all surveyed medicines administered in the outpatient and inpatient sector, respectively, in the 27 analysed countries (Malta was excluded due to insufficient data availability).

Compared to the other EU Member States, 80 percent of Austrian ex-factory prices of surveyed medicines were above the median. Overall, they were 4.4 percent above the average of the EU Member States, however differences between the two sectors were observed (0.5% above the EU average in the outpatient sector and 10.3% above the EU average in the inpatient sector). Austrian ex-factory prices were the lowest for a few of the analysed high-cost medicines in the outpatient sector, whereas they were never the lowest in the inpatient sector. While Austrian pharmacy purchasing prices (wholesale prices) in the outpatient sector ranked in the middle of the EU Member States (similar to the ex-factory prices of outpatient high-cost medicines), Austrian net pharmacy retail prices (i.e. without value-added tax) were among the highest in European comparison.

Price indices (i.e. weighted price data) showed the same pattern: Austrian ex-factory prices in the outpatient sector ranked in the middle whereas the price index of the selected high-cost medicines in the inpatient sector was second highest after Ireland. Austrian net pharmacy retail prices ranked third highest.

Conclusion

The study confirmed findings of previous price comparisons that unregulated medicine prices in Austria's inpatient sector were high in an EU comparison and that Austrian pharmacy retail prices were among the highest in Europe.

Keywords

medicine price, pharmaceutical pricing, international price comparison, Austria

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Abbreviations

| | |
|---------|---|
| ASVG | General Social Security Law [Austria] |
| ATC | Anatomical Therapeutic Chemical [WHO Classification] |
| BMASGK | Federal Ministry of Labour, Social Affairs, Health and Consumer Protection [Austria] |
| BMGF | Federal Ministry of Health and Women's Affairs [Austria] |
| EMA | European Medicines Agency |
| EU | European Union |
| GÖG | Austrian Public Health Institute (Gesundheit Österreich GmbH) |
| i. e. | that is |
| mcg | microgram |
| mg | milligram |
| ml | millilitre |
| OECD | Organisation for Economic Cooperation and Development |
| Par. | paragraph |
| PHAGO | Austrian Association of Full-Line Pharmaceutical Wholesalers [Austria] |
| PHARMIG | Association of the Austrian Pharmaceutical Industry [Austria] |
| PPI | Pharma Price Information (Information about medicine prices in 30 European countries, service of GÖG) |
| PPP | pharmacy purchasing price |
| PRP | pharmacy retail price |

Abbreviations of country names

| | |
|----|----------------|
| AT | Austria |
| BE | Belgium |
| BG | Bulgaria |
| CY | Cyprus |
| CZ | Czech Republic |
| DE | Germany |
| DK | Denmark |
| EE | Estonia |
| EL | Greece |
| ES | Spain |
| FI | Finland |
| FR | France |
| HR | Croatia |
| HU | Hungary |
| IE | Ireland |
| IT | Italy |
| LT | Lithuania |
| LU | Luxembourg |
| LV | Latvia |
| NL | Netherlands |
| PL | Poland |
| PT | Portugal |
| RO | Romania |
| SE | Sweden |
| SI | Slovenia |
| SK | Slovakia |
| UK | United Kingdom |

Foreword

Gesundheit Österreich GmbH (GÖG) was commissioned by the section for health affairs of the Federal Ministry of Labor, Social Affairs, Health and Consumer Protection (BMASGK) to survey the Austrian prices for high-cost medicines in comparison to those in other European Union (EU) Member States. GÖG produced a scientific results report in which price data of the selected medicines were prepared and analysed. The full report *Price comparison of high-cost medicines in 2017 – Scientific Results Report* (available in German) contains analyses at the level of the ex-factory price as well as – for outpatient medicines – at the pharmacy purchasing and retail price level for alternative scenarios based on additional model assumptions (e.g. weighting by purchasing power parity).

This brief report summarises the main findings of this study.

The study was conducted for those 100 high-cost medicines, which, from the perspective of Austrian public payers, make up a relatively large share of public pharmaceutical expenditure due to their price and / or volume. The selection of the included medicines was based on information on high-cost medicines in 2017 in the outpatient and inpatient sector in Austria. The authors would like to thank Dr. Robert Saueremann from the Main Association of Austrian Social Security Institutions as well as Mag. Karin Kirchdorfer and her colleagues from the Board of the Austrian Association of Hospital Pharmacists for informing which medicines accounted for high expenditure in the outpatient and inpatient sectors, respectively.

Detailed information on the methodology used in the study can be found in a study protocol published in August 2017, which key Austrian and international stakeholders in the pharmaceutical system were invited to comment. We would like to thank the representatives of the Federal Ministry of Labor, Social Affairs, Health and Consumer Protection; the Main Association of Austrian Social Security Institutions, the Organization for Economic Cooperation and Development (OECD); the Dental and Pharmaceutical Benefits Agency in Sweden, the Austrian Chamber of Pharmacists; the Austrian Association of Hospital Pharmacists, the Association of the Pharmaceutical Industry of Austria (PHARMIG) and the Austrian Association of Full-Line Pharmaceutical Wholesalers (PHAGO) for their feedback on the study protocol.

Furthermore, the authors thank their colleagues who collected the price data by using the PPI service for the present study. Together with co-authors Peter Schneider and Nina Zimmermann, Ingrid Freiberger, Margit Gombocz, Claudia Habl, Bettina Heindl, Valentin Kandler, Klaus Kellner, Marlene Postl and Friederike Windisch collected price data for the present analysis.

1 Objective

The Gesundheit Österreich GmbH (GÖG) (Austrian Public Health Institute) was commissioned by the section for health affairs of the Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (BMASGK)¹ to survey and analyse the Austrian prices for high-cost medicines in comparison to those in other European Union (EU) Member States.

2 Methodology

The study was conducted for 100 high-cost medicines, which, from the public payer perspective, make up a relatively large share of public pharmaceutical expenditure in Austria due to their price and/or volume. The product selection was based on data from the Main Association of Austrian Social Security Institutions for high-cost medicines for the outpatient reimbursement sector, and from the Austrian Association of Hospital Pharmacists for the inpatient sector. The institutions informed which medicines accounted for high expenditure in the respective sectors. Only originator products were included in the study.

As Austria compares medicine prices of all EU Member States during its price setting, the study protocol aimed to involve all 28 EU Member States at the time of the survey. The prices of the 100 high-cost medicines were collected as of September 2017 with the help of the GÖG-based Service for Pharmaceutical Price Information (PPI). Malta was subsequently excluded from the analysis due to insufficient data.

Prices were compared at the unit price level (i.e., per unit of dispensing, e.g. per tablet, per injection) for identical medicines (i.e., in the same pharmaceutical form, dosage and pack size); in case where data were not available, an alternative but closest pack size was used. Currencies other than euro were converted using the monthly average rates for August 2017 provided by the European Central Bank.

For all 100 medicines, ex-factory prices were analysed, as well as pharmacy purchasing prices (PPP) and pharmacy retail prices (PRP) for the 60 studied medicines in the outpatient sector. The specifications of the price comparison (e.g. consideration of statutory manufacturer discounts, average wholesale margins in the case of countries with unregulated ex-factory price) complied with the provisions of the "Regulation for the Procedure of the Price Commission for the Determination of the EU Average Price pursuant to §§ 351c par. 6 and par. 9a ASVG". The study was conducted as a single price comparison (i.e. analysis of price data for individual medicines); alternatively, price data were weighted by volume.

¹ The study was commissioned in 2017 by the then Federal Ministry of Health and Women's Affairs (BMGF).

Further information on the included medicines, on further methodological details and on the terminology (glossary) used can be found in the full version of the scientific results report (in German) or in the study protocol (in English).

3 Results

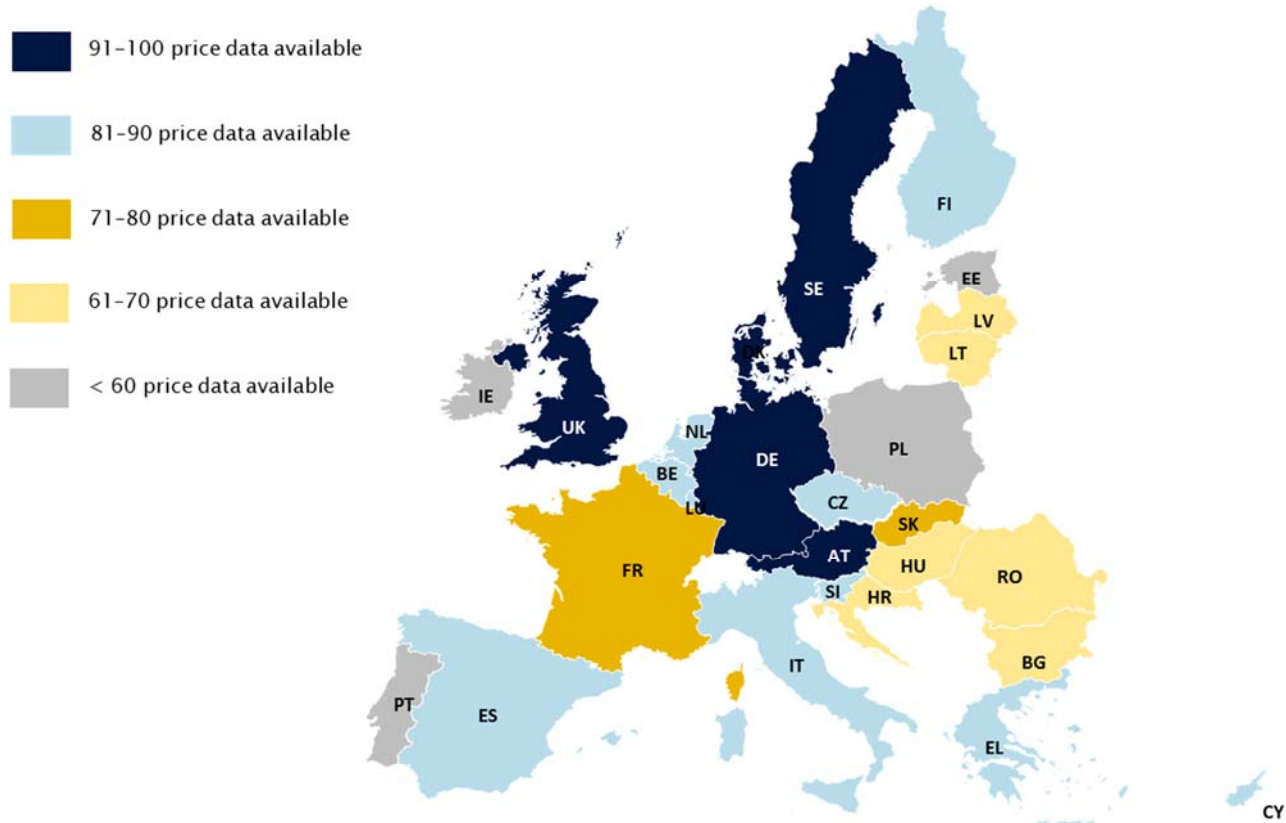
3.1 Data availability

In the 27 study countries, ex-factory price data were available for 82 percent and 69 percent of all surveyed medicines administered in the outpatient and inpatient sectors, respectively. In addition to Austria (100% data availability), Sweden (price data for 95 out of 100 medicines), Germany (94), the United Kingdom (93) and Denmark (91) showed high data availability at the ex-factory price level. For nine countries, price data for 81 to 90 medicines and in three other countries price data for 71 to 80 pharmaceutical products were collected. Countries with the lowest data availability were Portugal (missing data for 65 medicines), Estonia (missing data for 55 medicines), Ireland and Poland (47 missing medicines each) (see Figure 3.1).

Notable is the lack of data availability in the inpatient sector in these countries (Portugal – no price data from the inpatient sector, Estonia – price information only for two medicines and Ireland – 7 medicines).

In addition to Austria (60 out of 60 medicines), Italy (55) and Sweden (56) showed high data availability at the PPP level for the 60 medicines in the outpatient sector, while for the Czech Republic (0), Poland (33) and Portugal (35) no data or only a few data were available. In the Czech Republic, the low data availability is due to the joint remuneration of supply chain actors (wholesalers and community pharmacies), who share the statutory maximum margin, which may vary from case to case. In the United Kingdom, the Netherlands and Slovenia, price information is not available at the PRP level as a result of the performance-based remuneration for pharmacies. In Ireland, medicines are categorised into different reimbursement schemes, whereby for some the PRP can not be determined. Therefore, PRP data availability was low for these countries, as well as for Portugal (35) and Poland (33), while for Austria (60 out of 60 medicines), Italy (55) and the Czech Republic (55) most PRP data were available.

Figure 3.1:
Results – Availability of ex-factory price data for high-cost medicines in 27 EU Member States, 2017



100 high-cost medicines in the outpatient and inpatient sectors.
Malta was not included in the analysis due to low data availability.

Source and illustration: GÖG 2018

3.2 Prices in country comparison

3.2.1 Ex-factory prices

The ex-factory price per unit (median) ranges from 17 cents (Trazodon, package price of 60 units: 10.40 euros) to 20,417.00 euros (Treprostinil, unit price corresponds to the pack price). The latter is an infusion solution for the treatment of pulmonary arterial hypertension which was designated as an orphan medicinal product by the European Medicines Agency. In the inpatient sector, the median ex-factory price per unit for the most expensive medicine (ipilimumab) is 14,607.53 euros and for the cheapest (dexmedetomidine) it is 20.00 euros. A substantial price difference between the outpatient sector and the inpatient sector becomes obvious especially for low-priced medicines. While in the outpatient sector three-quarters of all medicines have an ex-factory price of less than 250 euros per unit (median), in the inpatient sector, three-quarters of the selected medicines reach a price of more than 250 euros.

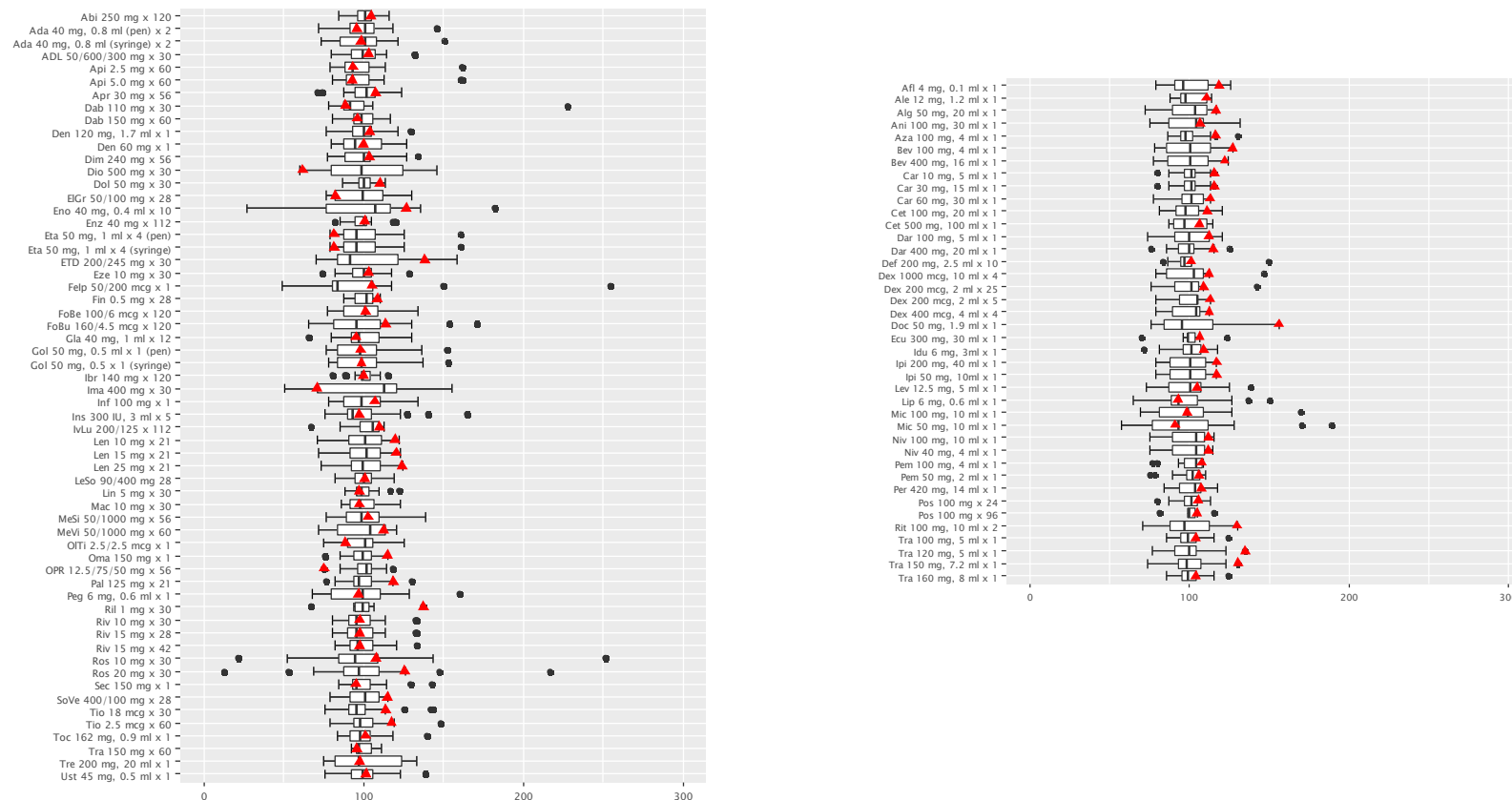
In EU comparison, Austrian ex-factory prices rank higher than the median in almost 80 percent of cases. On average, for high-cost medicines (outpatient and inpatient sector), Austrian prices are 28.4 percent higher than those in the lowest-priced country, 4.4 percent above the EU average and 30.6 percent below the price of medicines in the highest-priced country. The extent of price differences varies between medicines as well as between sectors. In the outpatient sector, Austria has the lowest price for some medicines, whereas this is never the case in the hospital sector. In the outpatient sector, Austrian prices are on average 26.7 per cent higher than those in the lowest-priced country (compared to 30.9 per cent in the inpatient sector). Austria's prices of high-cost medicines in the outpatient sector are 0.5% higher than the EU average (inpatient: on average 10.3%) and are on average 41.7% below the highest-priced country (inpatient: -14.1%).

A weighting of the price data using the "Equal Weights" method (equal weighting of prices of both outpatient and inpatient sectors based on the assumption of an equal volume-weight for the prices of both sectors in all countries) provides a similar picture in terms of the differences between the sectors: While in the inpatient sector the Austrian ex-factory prices rank among the highest in the EU (ranking second to Ireland), they rank 12th² among the 27 EU Member States included in the analysis (Figure 3.3).

² Germany, Denmark, Estonia, Latvia, Lithuania, Italy, Ireland, Luxembourg, the Netherlands, Belgium and Sweden ranked higher when using the "Equal Weights" price indices calculation.

Figure 3.2:

Results – Ex-factory prices of high-cost medicines in EU comparison, 2017 (average price of each medicine = 100), illustration for the outpatient sector (left panel) and the inpatient sector (right panel)

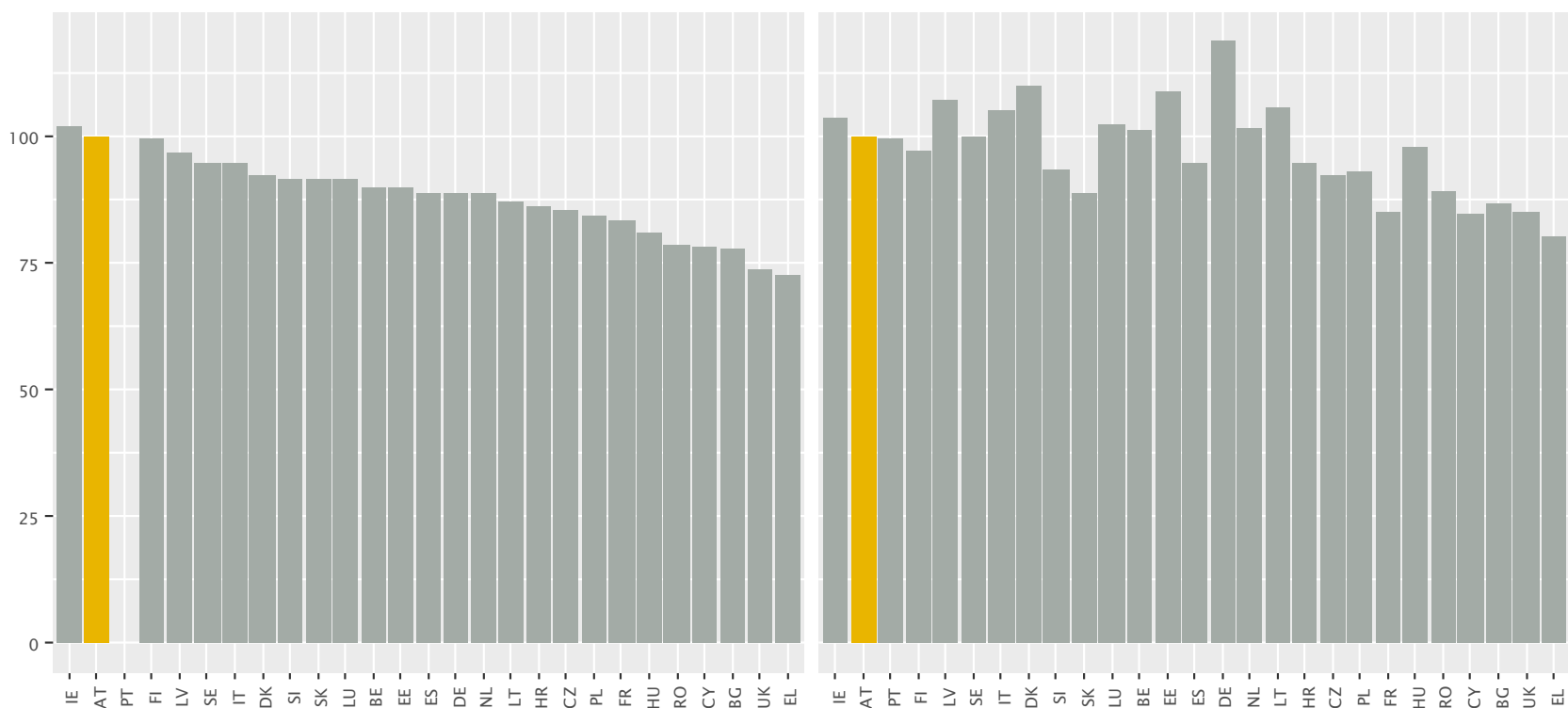


The average price of each medicine is defined as an index (= 100). The box corresponds to the area in which the middle 50% of the data are located (interquartile distance). The black line describes the location of the median and the red triangle the location of prices in Austria in the EU comparison. The dashed whiskers are limited to 1.5 times the length of the interquartile range. The circles stand for statistical outliers. For the abbreviations of the medicines cf. Table 5.1 and Table 5.2 in the Annex.

Source: Pharma Price Information (PPI); analyses und illustration: GÖG

Figure 3.3:

Results – Price index at the level of the ex-factory price for high-cost medicines in the outpatient (right panel) and inpatient (left panel) sectors in 27 EU Member States, equally weighted (i.e. number of prescriptions per medicine = 1), 2017



40 high-cost medicines in the inpatient sector and 60 high-cost medicines in the outpatient sector.

Malta was not included in the analysis due to low data availability.

Price data for the medicines of both sectors were equally weighted for all countries, i.e. each price data was given the weight 1.

Source: Main Association of Austrian Social Security Institutions, Austrian Association of Hospital Pharmacists, Pharma Price Information (PPI);
Figure: GÖG 2018

Alternative weighting methods based on social health insurance expenditure³ and the number of prescriptions in the Austrian outpatient reimbursement market confirm that Austria's prices in the outpatient sector ranked in the middle of the price range.⁴

3.2.2 Pharmacy purchasing prices

Results for the 60 high-cost medicines in the outpatient sector at the level of the PPP show a similar picture as for the ex-factory price in this sector. The Austrian PPP of high-cost medicines in the outpatient sector also rank in the middle of the price range; compared to other European countries they are slightly lower ranked than the ex-factory prices. The Austrian PPP are on average 23.3 percent above those of the lowest-priced country, 0.3 percent below the average and 42.9 percent below those of the highest-priced country (comparative figures in the outpatient sector at the ex-factory price level: 26.7%, 0.5% and 41.7%). Also in the price index calculations, Austrian PPP are again positioned in the middle of the European price range.

3.2.3 Pharmacy retail prices

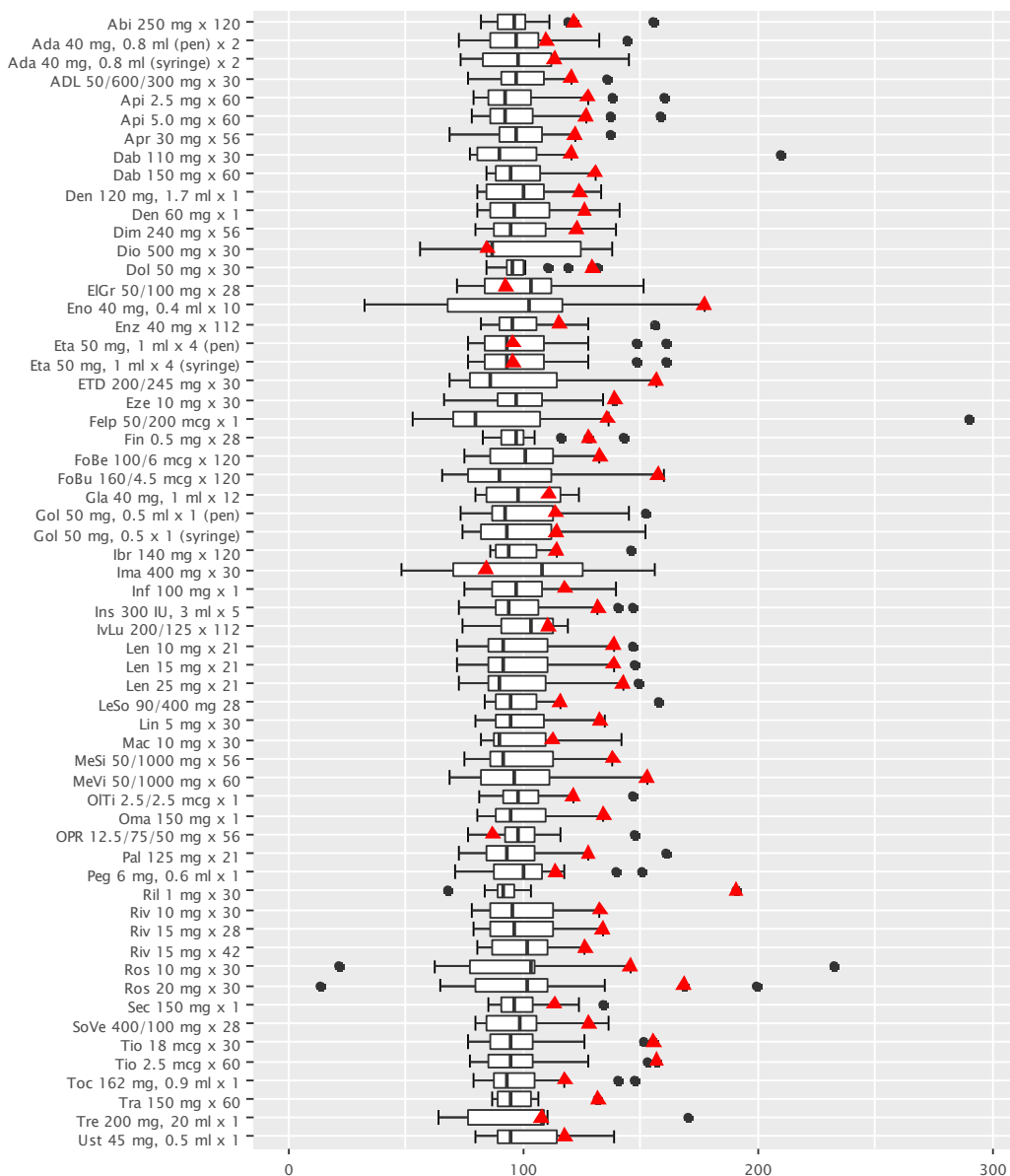
The picture changes for the PRP. At the level of the PRP net (excluding VAT), Austria is never the lowest-priced country, and for almost a quarter of the high-cost medicines in the outpatient sector, Austrian PRP are the highest in Europe (Figure 3.4). The PRP net in Austria are 40.6 percent higher than those in the lowest-priced country, 18.9 percent above the average value of prices and 22.6 percent below the prices in the highest-priced country. The price indices confirmed Austria's PRP in the upper range: Austria ranked third in European comparison both in terms of prescriptions and social health insurance expenditure, behind Italy and Belgium (weighted by prescriptions) and, Italy and Germany (weighted by expenditure).

³ In this method, medicines were weighted with their share of the social health expenditure of the 60 high-cost products.

⁴ This weighting method could only be applied to the outpatient sector as there are no data in terms of volume or expenditure for the inpatient sector in Austria. In both the weighting of the price data by the Austrian expenditure and by prescriptions, the high-cost medicines of the outpatient sector rank 15th among the EU Member States.

Figure 3.4:

Results – Pharmacy retail prices of high-cost medicines in the outpatient sector in the EU comparison, 2017 (average price of each medicine = 100)



The average price of each medicine is set as an index (= 100). The box corresponds to the area in which the middle 50% of the data are located (interquartile distance). The black line describes the location of the median and the red triangle the location of prices in Austria in the EU comparison. The dashed whiskers are limited to 1.5 times the length of the interquartile range. The circles represent statistical outliers.

The abbreviations of the medicines are explained in Table 5.1 in the Annex.

Source: Pharma Price Information (PPI); analyses und illustration: GÖG

4 Conclusions

Among high-cost medicines, the Austrian ex-factory prices in the outpatient sector rank in the middle of the price range, whereas the unregulated ex-factory prices in the inpatient sector are among the highest in the EU. These findings indicate a need for action to regulate prices in the inpatient sector, while the current pricing in the outpatient sector appears to achieve its intended target of medicine prices at the level of the average European price.

Shifts between price levels were observed among the high-cost medicines in the outpatient sector. The Austrian PRP rank significantly higher compared to the ex-factory prices and PPP, which can be seen as an indication of higher pharmacy margins for the high-cost medicines in Austria compared to EU Member States. However, these data should be evaluated against the backdrop of possible different pharmacy services and different margins for other product segments that are relevant from the pharmacy perspective.

The present study comes to the same conclusions as the two previous GÖG price studies in 2015 and 2013, albeit the previous studies refer to other medicines, namely the high-cost medicines in the respective study periods. Changes in the identified high-cost medicines in the previous years confirm the need for regular monitoring of medicine prices, as new medicines enter the market, posing a challenge to the sustainability of the healthcare system.

5 Annex

Table 5.1:

List of the 60 high-cost medicines in the outpatient sector in the period January–April 2017, arranged in alphabetical order by active substance

| Active substance | Abbreviation in Boxplots | Brand name | ATC code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|-----------------------------------|---------------------------------|------------|----------|---------------------------------|-------------------------|---------|------------------------|-----------|----------------------|
| Abacavir/Dolutegravir/ Lamivudine | ADL 50/600/300 mg × 30 | Triumeq® | J05AR | EU/1/14/940/001 | 50 mg / 600 mg / 300 mg | | Film-coated tablet | 30 | Bottle |
| Abiraterone | Abi 250 mg × 120 | Zytiga® | L02BX | EU/1/11/714/001 | 250 mg | | Tablet | 120 | Bottle |
| Adalimumab | Ada 40 mg, 0.8 ml (syringe) × 2 | Humira® | L04AB04 | EU/1/03/256/003 | 40 mg | 0.8 ml | Solution for injection | 2 | Pre-filled syringe |
| Adalimumab | Ada 40 mg, 0.8 ml (pen) × 2 | Humira® | L04AB04 | EU/1/03/256/008 | 40 mg | 0.8 ml | Solution for injection | 2 | Pre-filled pen |
| Apixaban | Api 2.5 mg × 60 | Eliquis® | B01AF02 | EU/1/11/691/001 | 2.5 mg | | Film-coated tablet | 60 | Blister |
| Apixaban | Api 5.0 mg × 60 | Eliquis® | B01AF02 | EU/1/11/691/009 | 5 mg | | Film-coated tablet | 60 | Blister |
| Apremilast | Apr 30 mg × 56 | Otezla® | L04AA32 | EU/1/14/981/002 | 30 mg | | Film-coated tablet | 56 | Blister |
| Dabigatran etexilate | Dab 110 mg × 30 | Pradaxa® | B01AE07 | EU/1/08/442/008 | 110 mg | | Hard capsule | 30 | Blister ¹ |
| Dabigatran etexilate | Dab 150 mg × 60 | Pradaxa® | B01AE07 | EU/1/08/442/011 | 150 mg | | Hard capsule | 60 | Blister ¹ |
| Denosumab | Den 60 mg × 1 | Prolia® | M05BX04 | EU/1/10/618/003 | 60 mg | 1 ml | Solution for injection | 1 | Pre-filled syringe |
| Denosumab | Den 120 mg, 1.7 ml × 1 | Xgeva® | M05BX04 | EU/1/11/703/001 | 120 mg | 1.7 ml | Solution for injection | 1 | Vial |
| Dimethyl fumarate | Dim 240 mg × 56 | Tecfidera® | N07XX09 | EU/1/13/837/002 | 240 mg | | Hard capsule | 56 | Blister |
| Diosmin Combinations | Dio 500 mg × 30 | Daflon® | C05CA53 | 1-20685 | 500 mg | | Film-coated tablet | 30 | Blister |
| Dolutegravir | Dol 50 mg × 30 | Tivicay® | J05AX12 | EU/1/13/892/001 | 50 mg | | Film-coated tablet | 30 | Bottle |

| Active substance | Abbreviation in Boxplots | Brand name | ATC code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|-------------------------------------|-------------------------------|------------|----------|---------------------------------|-------------------|-----------|------------------------|-----------|----------------------|
| Elbasvir/Grazoprevir | ElGr 50/100 mg × 28 | Zepatier® | J05A | EU/1/16/1119/001 | 50 mg / 100 mg | | Film-coated tablet | 28 | Blister |
| Emtricitabine/ Tenofovir disoproxil | ETD 200/245 mg × 30 | Truvada® | J05AR03 | EU/1/04/305/001 | 200 mg / 245 mg | | Film-coated tablet | 30 | Bottle |
| Enoxaparin | Eno 40 mg, 0.4 ml × 10 | Lovenox® | B01AB05 | 1-18662 | 40 mg | 0.4 ml | Solution for injection | 10 | Pre-filled syringe |
| Enzalutamide | Enz 40 mg × 112 | Xtandi® | L02BB04 | EU/1/13/846/001 | 40 mg | | Soft capsule | 112 | Blister |
| Etanercept | Eta 50 mg, 1 ml × 4 (syringe) | Enbrel® | L04AB01 | EU/1/99/126/017 | 50 mg | 1 ml | Solution for injection | 4 | Pre-filled syringe |
| Etanercept | Eta 50 mg, 1 ml × 4 (pen) | Enbrel® | L04AB01 | EU/1/99/126/020 | 50 mg | 1 ml | Solution for injection | 4 | Pre-filled pen |
| Ezetimibe | Eze 10 mg × 30 | Ezetrol® | C10AX09 | 1-24902 | 10 mg | | Tablet | 30 | Blister |
| Fenoterol/ Ipratropium bromide | Felp 50/200 mcg × 1 | Berodual® | R03AL01 | 1-16995 | 50 mcg / 20 mcg | 200 puffs | Inhalation solution | 1 | Metered-dose inhaler |
| Fingolimod | Fin 0.5 mg × 28 | Gilenya® | L04AA | EU/1/11/677/005 | 0.5 mg | | Hard capsule | 28 | Blister ² |
| Formoterol/ Beclometasone | FoBe 100/6 mcg × 120 | Foster® | R03AK08 | 1-27002 | 100 mcg / 6 mcg | 120 puffs | Inhalation solution | 1 | Metered-dose inhaler |
| Formoterol/Budesonid | FoBu 160/4.5 mcg × 120 | Symbicort® | R03AK07 | 1-23993 | 160 mcg / 4.5 mcg | 120 puffs | Inhalationspulver | 1 | Inhaler |
| Glatiramer acetate | Gla 40 mg, 1 ml × 12 | Copaxone® | L03AX13 | 1-35998 | 40 mg | 1 ml | Solution for injection | 12 | Pre-filled syringe |
| Golimumab | Gol 50 mg, 0.5 ml × 1 (pen) | Simponi® | L04AB06 | EU/1/09/546/001 | 50 mg | 0.5 ml | Solution for injection | 1 | Pre-filled pen |
| Golimumab | Gol 50 mg, 0.5 × 1 (syringe) | Simponi® | L04AB06 | EU/1/09/546/003 | 50 mg | 0.5 ml | Solution for injection | 1 | Pre-filled syringe |
| Ibrutinib | Ibr 140 mg × 120 | Imbruvica® | L01XE | EU/1/14/945/002 | 140 mg | | Hard capsule | 120 | Bottle |
| Imatinib | Ima 400 mg × 30 | Glivec® | L01XE01 | EU/1/01/198/010 | 400 mg | | Film-coated tablet | 30 | Blister |
| Infliximab | Inf 100 mg × 1 | Remicade® | L04AB02 | EU/1/99/116/003 | 100 mg | | Powder | 3 | Vial |
| Insulin aspart | Ins 300 IU, 3 ml × 5 | NovoRapid® | A10AB05 | EU/1/99/119/003 | 100 U/ml | 3 ml | Solution for injection | 5 | Cartridge (glas) |

| Active substance | Abbreviation in Boxplots | Brand name | ATC code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|---------------------------------------|--------------------------|------------|----------|---------------------------------|-------------------------|---------|------------------------|-----------|----------------------|
| Ivacaftor/Lumacaftor | IvLu 200/125 × 112 | Orkambi® | R07AX30 | EU/1/15/1059/001 | 200 mg / 125 mg | | Film-coated tablet | 112 | Blister |
| Ledispavir/Sofosbuvir | LeSo 90/400 mg 28 | Harvoni® | | EU/1/14/958/001 | 90 mg / 400 mg | | Film-coated tablet | 28 | Bottle |
| Lenalidomide | Len 10 mg × 21 | Revlimid® | L04AX04 | EU/1/07/391/002 | 10 mg | | Hard capsule | 21 | Blister |
| Lenalidomide | Len 15 mg × 21 | Revlimid® | L04AX04 | EU/1/07/391/004 | 25 mg | | Hard capsule | 21 | Blister |
| Lenalidomide | Len 25 mg × 21 | Revlimid® | L04AX04 | EU/1/07/391/003 | 15 mg | | Hard capsule | 21 | Blister |
| Linagliptin | Lin 5 mg × 30 | Trajenta® | A10BH05 | EU/1/11/707/004 | 5 mg | | Film-coated tablet | 30 | Blister |
| Macitentan | Mac 10 mg × 30 | Opsumit® | C02KX04 | EU/1/13/893/002 | 10 mg | | Film-coated tablet | 30 | Blister ³ |
| Metformin/Sitagliptin | MeSi 50/1000 mg × 56 | Janumet® | A10BD07 | EU/1/08/455/010 | 50 mg / 1000 mg | | Film-coated tablet | 56 | Blister |
| Metformin/Vildagliptin | MeVi 50/1000 mg × 60 | Eucreas® | A10BD08 | EU/1/07/425/009 | 50 mg / 1000 mg | | Film-coated tablet | 60 | Blister ⁴ |
| Olodaterol/ Tiotropium Bromid | OITi 2.5/2.5 mcg × 1 | Spiolto® | R03AL06 | 1-36299 | 2.5 mcg / 2.5 mcg | 60 Hübe | Inhalation solution | 1 | Metered-dose inhaler |
| Omaliuzumab | Oma 150 mg × 1 | Xolair® | R03DX05 | EU/1/05/319/008 | 150 mg | 1 ml | Solution for injection | 1 | Pre-filled syringe |
| Ombitasvir/ Paritaprevir/Ritonavir | OPR 12.5/75/50 mg × 56 | Viekirax® | J05AX67 | EU/1/14/982/001 | 12.5 mg / 75 mg / 50 mg | | Film-coated tablet | 56 | Blister |
| Palbociclib | Pal 125 mg × 21 | Ibrance® | L01XE33 | EU/1/16/1147/005 | 125 mg | | Hard capsule | 21 | Blister ³ |
| Pegfilgrastim | Peg 6 mg, 0.6 ml × 1 | Neulasta® | L03AA13 | EU/1/02/227/004 | 6 mg | 0.6 ml | Solution for injection | 1 | Pre-filled syringe |
| Rilmenidine | Ril 1 mg × 30 | Iterium® | C02AC06 | 1-23813 | 1 mg | | Tablet | 30 | Blister |
| Rivaroxaban | Riv 15 mg × 28 | Xarelto® | B01AF01 | EU/1/08/472/012 | 15 mg | | Film-coated tablet | 28 | Blister |
| Rivaroxaban | Riv 15 mg × 42 | Xarelto® | B01AF01 | EU/1/08/472/013 | 15 mg | | Film-coated tablet | 42 | Blister |
| Rivaroxaban | Riv 10 mg × 30 | Xarelto® | B01AF01 | EU/1/08/472/018 | 20 mg | | Film-coated tablet | 28 | Blister |
| Rosuvastatin | Ros 10 mg × 30 | Crestor® | C10AA07 | 1-24883 | 10 mg | | Film-coated tablet | 30 | Blister |

| Active substance | Abbreviation in Boxplots | Brand name | ATC code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|------------------------|--------------------------|------------|----------|---------------------------------|-------------------|---------|------------------------|-----------|-----------------------|
| Rosuvastatin | Ros 20 mg × 30 | Crestor® | C10AA07 | 1-24883 | 20 mg | | Film-coated tablet | 30 | Blister |
| Secukinumab | Sec 150 mg × 1 | Cosentyx® | L04AC10 | EU/1/14/980/005 | 150 mg | 1 ml | Solution for injection | 2 | Pre-filled pen |
| Sofosbuvir/Velpatasvir | SoVe 400/100 mg × 28 | Epclusa® | J05A | EU/1/16/1116/001 | 400 mg 100 mg | | Film-coated tablet | 28 | Bottle |
| Tiotropium Bromid | Tio 18 mcg × 30 | Spiriva® | R03BB04 | 1-24507 | 18 mcg | | Inhalation powder | 30 | Capsules ⁵ |
| Tiotropium Bromid | Tio 2.5 mcg × 60 | Spiriva® | R03BB04 | 1-27222 | 2.5 mcg | 60 Hübe | Inhalation solution | 1 | Inhaler |
| Tocilizumab | Toc 162 mg, 0.9 ml × 1 | RoActemra® | L04AC07 | EU/1/08/492/007 | 162 mg | 0.9 ml | Solution for injection | 4 | Pre-filled syringe |
| Trazodone | Tra 150 mg × 60 | Trittico® | N06AX05 | 1-23301 | 150 mg | | Retard tablet | 60 | Blister |
| Treprostinil | Tre 200 mg, 20 ml × 1 | Remodulin® | B01AC21 | 1-26523 | 10 mg/ml | 20 ml | Solution for infusion | 20 | Vial |
| Ustekinumab | Ust 45 mg, 0.5 ml × 1 | Stelara® | L04AC05 | EU/1/08/494/003 | 45 mg | 0.5 ml | Solution for injection | 1 | Pre-filled syringe |

ATC = Anatomical Therapeutic Chemical, EMA = European Medicines Agency

¹ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Blister (alu/alu), (2) Bottle (PP), (3) White blister (alu/alu)

² authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Blister-wallet, (2) Blister-folding box

³ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Capsule/tablet in blister, (2) Capsule/tablet in bottle

⁴ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Blister (PA/alu/PVC/Alu), (2) Blister (PCTFE/PVC/alu)

⁵ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Capsule, (2) Capsule with inhaler

Apixaban, ezetimib, linagliptin, metformin/sitagliptin and rosuvastatin; authorised medicine with different sizes was considered, if no price information was available for this medicine.

Source: Main Association of Austrian Social Security Institutions, Illustration: Gesundheit Österreich GmbH

Table 5.2:

List of the 40 high-cost medicines in the inpatient sector, 2017, arranged in alphabetical order by active substance

| Active substance | Abbreviation in Boxplots | Brand name | ATC-code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|--------------------|--------------------------|------------|----------|---------------------------------|-------------------|---------|---|-----------|-------------------|
| Aflibercept | Afl 4 mg, 0.1 ml × 1 | Eylea® | S01LA | EU/1/12/797/002 | 40 mg/ml | 0.1 ml | Solution for injection | 1 | Vial ¹ |
| Alemtuzumab | Ale 12 mg, 1.2 ml × 1 | Lemtrada® | L04AA | EU/1/13/869/001 | 12 mg | 1.2 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Alglucosidase alfa | Alg 50 mg, 20 ml × 1 | Myozyme® | A16AB07 | EU/1/06/333/002 | 50 mg | 20 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Anidulafungin | Ani 100 mg, 30 ml × 1 | Ecalta® | J02AX06 | EU/1/07/416/002 | 100 mg | 30 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Azacididine | Aza 100 mg, 4 ml × 1 | Vidaza® | L01BC07 | EU/1/08/488/001 | 25 mg/ml | 4 ml | Powder to produce a suspension for injection | 1 | Vial |
| Bevacizumab | Bev 100 mg, 4 ml × 1 | Avastin® | L01XC07 | EU/1/04/300/001 | 25 mg/ml | 4 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Bevacizumab | Bev 400 mg, 16 ml × 1 | Avastin® | L01XC07 | EU/1/04/300/002 | 25 mg/ml | 16 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Carfilzomib | Car 60 mg, 30 ml × 1 | Kyprolis® | L01XX45 | EU/1/15/1060/001 | 60 mg | 30 ml | Powder for solution for infusion | 1 | Vial |
| Carfilzomib | Car 10 mg, 5 ml × 1 | Kyprolis® | L01XX45 | EU/1/15/1060/002 | 10 mg | 5 ml | Powder for solution for infusion | 1 | Vial |
| Carfilzomib | Car 30 mg, 15 ml × 1 | Kyprolis® | L01XX45 | EU/1/15/1060/003 | 30 mg | 15 ml | Powder for solution for infusion | 1 | Vial |
| Cetuximab | Cet 100 mg, 20 ml × 1 | Erbix® | L01XC06 | EU/1/04/281/003 | 5 mg/ml | 20 ml | Solution for infusion | 1 | Vial |
| Cetuximab | Cet 500 mg, 100 ml × 1 | Erbix® | L01XC06 | EU/1/04/281/005 | 5 mg/ml | 100 ml | Solution for infusion | 1 | Vial |
| Daratumumab | Dar 100 mg, 5 ml × 1 | Darzalex® | L01XC24 | EU/1/16/1101/001 | 20 mg/ml | 5 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Daratumumab | Dar 400 mg, 20 ml × 1 | Darzalex® | L01XC24 | EU/1/16/1101/002 | 20 mg/ml | 20 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Defibrotide | Def 200 mg, 2.5 ml × 10 | Defitelio® | B01AX01 | EU/1/13/878/001 | 80 mg/ml | 2.5 ml | Concentrate to produce a solution for infusion | 10 | Vial |

| Active substance | Abbreviation in Boxplots | Brand name | ATC-code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|------------------|--------------------------|------------|----------|------------------------------------|----------------------|-----------------------------|--|-----------|---------------------------------|
| Dexmedetomidine | Dex 200 mcg, 2 ml × 5 | Dexdor® | N05CM18 | EU/1/11/718/001 | 100 mcg/ml | 2 ml | Concentrate to produce a solution for infusion | 5 | Ampoule (Glass) ² |
| Dexmedetomidine | Dex 200 mcg, 2 ml × 25 | Dexcor® | N05CM18 | EU/1/11/718/002 | 100 mcg/ml | 2 ml | Concentrate to produce a solution for infusion | 25 | Ampoule (Glass) |
| Dexmedetomidine | Dex 400 mcg, 4 ml × 4 | Dexdor® | N05CM18 | EU/1/11/718/004 | 100 mcg/ml | 4 ml | Concentrate to produce a solution for infusion | 4 | Vial |
| Dexmedetomidine | Dex 1000 mcg, 10 ml × 4 | Dexdor® | N05CM18 | EU/1/11/718/006 | 100 mcg/ml | 10 ml | Concentrate to produce a solution for infusion | 4 | Vial |
| Doxorubicin | Doc 50 mg, 1.9 ml × 1 | Myocet® | L01DB01 | EU/1/00/141/001 | 50 mg | 50 mg / 1.9 ml / 3 ml | Powder, dispersion and solution for a concentrate to produce a dispersion for infusion | 2 | Set with 3 vials |
| Eculizumab | Ecu 300 mg, 30 ml × 1 | Soliris® | L04AA25 | EU/1/07/393/001 | 300 mg | 30 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Idursulfase | Idu 6 mg, 3ml × 1 | Elaprase | A16AB09 | EU/1/06/365/001 | 2 mg/ml | 3 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Ipilimumab | Ipi 50 mg, 10ml × 1 | Yervoy® | L01XC11 | EU/1/11/698/001 | 5 mg/ml | 10 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Ipilimumab | Ipi 200 mg, 40 ml × 1 | Yervoy® | L01XC11 | EU/1/11/698/002 | 5 mg/ml | 40 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Levosimendan | Lev 12.5 mg, 5 ml × 1 | Simdax® | C01CX08 | 1-24093 | 2.5 mg/ml | 5 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Lipegfilgrastim | Lip 6 mg, 0.6 ml × 1 | Lonquex® | L03AA14 | EU/1/13/856/002 | 6 mg | 0.6 ml | Solution for injection | 1 | Pre-filled syringe ³ |
| Micafungin | Mic 50 mg, 10 ml × 1 | Mycamine® | J02AX05 | EU/1/08/448/001 | 50 mg | 10 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Micafungin | Mic 100 mg, 10 ml × 1 | Mycamine® | J02AX05 | EU/1/08/448/002 | 100 mg | 10 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Nivolumab | Niv 40 mg, 4 ml × 1 | Opdivo® | L01XC17 | EU/1/15/1014/001 | 10 mg/ml | 4 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Nivolumab | Niv 100 mg, 10 ml × 1 | Opdivo® | L01XC17 | EU/1/15/1014/002 | 10 mg/ml | 10 ml | Concentrate to produce a solution for infusion | 1 | Vial |

| Active substance | Abbreviation in Boxplots | Brand name | ATC-code | EMA-number/ registration number | Strength / Dosage | Content | Dosage form | Pack size | Form of packaging |
|-----------------------|--------------------------|------------|----------|------------------------------------|----------------------|---------|---|-----------|-------------------|
| Pembrolizumab | Pem 50 mg, 2 ml × 1 | Keytruda® | L01XC18 | EU/1/15/1024/001 | 50 mg | 2 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Pembrolizumab | Pem 100 mg, 4 ml × 1 | Keytruda® | L01XC18 | EU/1/15/1024/002 | 100 mg | 4 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Pertuzumab | Per 420 mg, 14 ml × 1 | Perjeta® | L01XC13 | EU/1/13/813/001 | 420 mg | 14 ml | Concentrate to produce a solution for infusion | 1 | Vial |
| Posaconazole | Pos 100 mg × 24 | Noxafil® | J02AC04 | EU/1/05/320/002 | 100 mg | | Enteric tablet | 24 | Blister |
| Posaconazole | Pos 100 mg × 96 | Noxafil® | J02AC04 | EU/1/05/320/003 | 100 mg | | Enteric tablet | 96 | Blister |
| Rituximab | Rit 100 mg, 10 ml × 2 | Mabthera® | L01XC02 | EU/1/98/067/001 | 100 mg | 10 ml | Concentrate to produce a solution for infusion | 2 | Vial |
| Trastuzumab | Tra 150 mg, 7.2 ml × 1 | Herceptin® | L01XC03 | EU/1/00/145/001 | 150 mg | 7.2 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Trastuzumab | Tra 120 mg, 5 ml × 1 | Herceptin® | L01XC03 | EU/1/00/145/002 | 120 mg/ml | 5 ml | Solution for injection | 1 | Vial |
| Trastuzumab Emtansine | TrEm 100 mg, 5 ml × 1 | Kadcyla® | L01XC14 | EU/1/13/885/001 | 100 mg | 5 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |
| Trastuzumab Emtansine | TrEm 160 mg, 8 ml × 1 | Kadcyla® | L01XC14 | EU/1/13/885/002 | 160 mg | 8 ml | Powder for a concentrate to produce a solution for infusion | 1 | Vial |

ATC = Anatomical Therapeutic Chemical, EMA = European Medicines Agency

¹ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Pre-filled syringe (glas), (2) Vial

² authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Vial, (2) Ampoule (glass)

³ authorised medicines of this active substance, which can be considered equivalent for the price comparison: (1) Pre-filled syringe with needle guard, (2) Pre-filled syringe

Source: Austrian Association of Hospital Pharmacists, Illustration: Gesundheit Österreich GmbH