SPECIAL Report

New Drugs Listed in 2020

A Synopsis of the Key Drugs Listed in 2020 – their positioning and how they are going to impact the market landscape.

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SPECIAL Report

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Overview of New Drugs[*1] Listed in 2020

In 2020, a total of 52 new drug entities were listed in Japan. This count was little smaller than the count of new drugs listed an year ago in the 2019 (54 new drugs), however the combined peak sales estimate for 2020 was slightly higher (¥405 Billion vs. ¥388 Billion).

Oncology continues to be largest contributor for new drugs flow and a total of 10 new drugs from oncology were listed. It was followed by 9 from CNS and 4 each Anti-diabetes and Anti-anaemic categories (Figure 1).

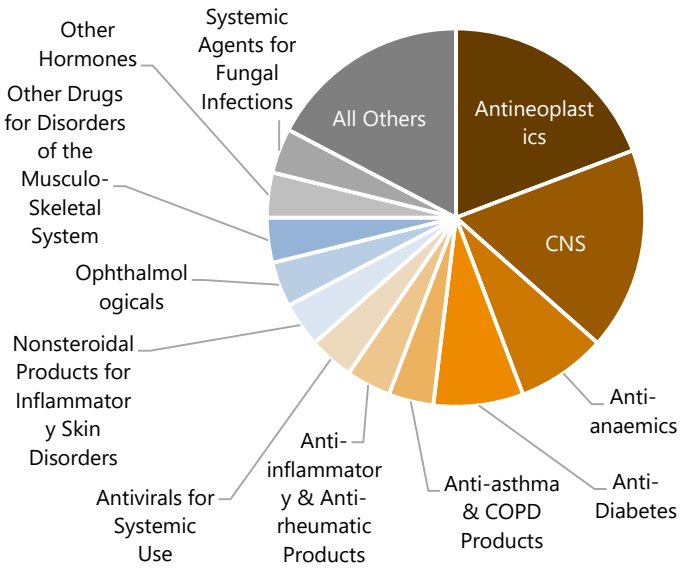


Figure 1. New Drugs Listing in 2020 by Therapeutic Category

Source: MHLW, Encise Research Center

On pricing method front – maximum 25 drugs were priced by 'similar efficacy comparison method (I)', followed by 15 from the 'cost accounting method' (Figure 2).

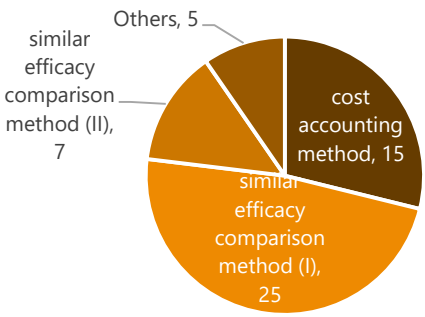


Figure 2. New Drugs Listing by Price Method

Source: MHLW, Encise Research Center

[*1]…The report includes all drugs approved under 'ethical drugs' and 'human cell therapy and gene therapy products' categories specified by the MHLW.

Out of these 52 newly listed drug entities, 17 are expected to have over ¥10 Billion of peak sales potential and 24 have received 'price-maintenance premium'. Out of these 52, 10 are biologics and 10 are listed under orphan drug status. (Figure 3 to 6).

A more comprehensive overview of new drugs listing in past 10 years is provided under the appendix of this report (figure 7 to figure 12).

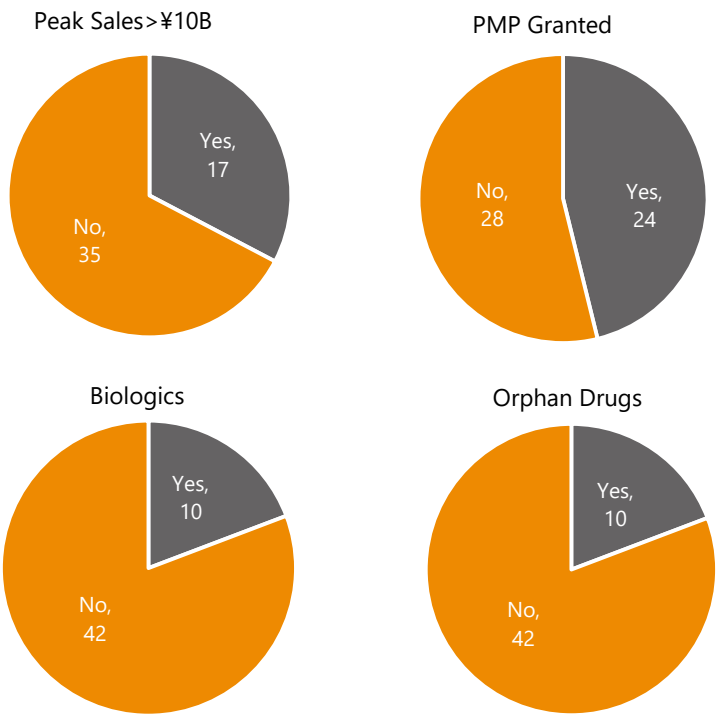


Figure 3 to 6.
New Drugs Listings by Different Categories
Source: MHLW, Encise Research Center

Beovu – New Player in the Intensifying Competition for Biologics Targeting AMD

Drug Profile - Beovu					
Molecule Type	Biologics (mAb)	Molecule	Brolucizumab (Genetical recombination)	Brand	Beovu
Launch Month	May 2020	Form	Injection	Strength	19.8 mg
Therapeutic Classes[*2] (2nd level)	Ophthalmologicals	Mechanism of Action (MOA)	Inhibitory effect on VEGF		
Therapeutic Classes[*2] (3rd level)	Ocular Antineovascularisation Products				
Indication	Age-related macular degeneration associated with subfoveal choroidal neovascularization				
Manufacturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	ESBATech
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥142,784	Peak Sales (Predicted[*3])	¥29.4 Billion
Total Sales of the Therapeutic Category[*4]					¥109 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					60%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Age-related Macular Degeneration (AMD) and its Subtypes: There are two types of AMD, called 'dry' and 'wet'. Estimated about 85-90 % percent cases are dry and remaining only 10-15% are wet. However, wet-AMD is accounted responsible for about 80% on vision loss cases in the people of over 50 years age. AMD poses a major health challenge for a higher and growing proportion of elderly in Japan.

Wet-AMD is a more advanced form of the disease and causes vision loss when abnormal blood vessels grow in the eye. These blood vessels leak and bleed below the center part of the retina, the macula, and causes permanent vision loss. While in the dry-AMD, the blood vessels in the eye do not leak. In the early dry-AMD there are minimal symptoms and vision loss occurs gradually in the mid to late stages.

Market Landscape: Vascular endothelial growth factor (VAGF) inhibitors (or anti-VAGF) have been dominating this market. The first anti-VEGF medication for AMD was Macugen (pegaptanib) which was non-biologic and was knocked-out after the entry of more effective and dose convenient biologic anti-VAGF drugs.

Lucentis was the first biologics launched in 2009. It is administered at once a month and approved for several indications. It posted ¥26.4 Billion (-9.0% YoY) in FY 03/2021. The biosimilars for Lucentis are already filed in Japan in September 2020 (by Senju and Gene Techno Science).

Eylea was the second biologic and has been dominating the market since its launch in November 2012 (FY 03/2021 sales ¥78.8 Billion, 6.5% YoY). In some overseas markets, reportedly Roche's Avastin (bevacizumab) is off-label used for the AMD.

Position of Beovu: It is a VEGF-A inhibitor like Lucentis and binds to the three major isoforms of VEGF-A ($VEGF_{110}$, $VEGF_{121}$, and $VEGF_{165}$) and prevents interaction with receptors VEGFR-1 and VEGFR-2.

Compared to Eylea, it offers longer dosing Interval and non-Inferior efficacy, which positions it as a high potential drug candidate. It has the highest forecasted peak-sales potential among all drugs approved in 2020 (¥29.4 Billion). Its maintenance dosing interval is once every 12 weeks (vs. once every 2-month dosing for Eylea). However, in ALTAIR study announced uary20, Eylea also provided evidence on treatment at intervals of 12 weeks and 16 weeks. Although it is not clear yet if Eylea label will be revised for dosing interval change. The label of Eylea in the EU and some Asian countries (except for Japan) has been revised based on the results of ALTAIR study. Since most AMD patients are elderly, longer treatment intervals could reduce burdens on patients and caregivers.

Both Lucentis and Eylea carry a wide indication base, which include Diabetic Macular Edema (DME) and Macular Edema following Retinal Vein Occlusion (MEfRVO) apart from wet-AMD. While Beovu currently only approved for wet-AMD.

Pipeline Developments - In June 2021, Chugai (Roche) has also filed NDA for Faricimab, a bispecific antibody which blocks VEGF-A & angiopoietin-2 (Ang-2) pathways, for DME and neovascular age-related macular degeneration (nAMD). Faricimab offers a dose flexibility of once every 16 weeks. In the head-to head trails vs Eylea, it demonstrated non-inferior visual acuity gains vs Eylea which is given every 2 months.

Global Status - Beovu was approved in the US in October 2019.

Cabometyx for RCC and HCC

Drug Profile - Cabometyx					
Molecule Type	Small Molecule	Molecule	Cabozantinib malate	Brand	CABOMETYX
Launch Month	May 2020	Form	Tablet	Strength	20 mg, 60 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibition effect on tumor cell proliferation, antiangiogenic effect		
Therapeutic Classes[*2] (3rd level)	Protein Kinase Inhibitor Antineoplastics				
Indication	Unresectable or metastatic renal cell carcinoma				
Manufacturer	Takeda Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Exelixis
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥8,007.6, ¥22,333	Peak Sales (Predicted[*3])	¥12.7 Billion
Total Sales of the Therapeutic Category[*4]					¥442.7 Billion
Contribution of the Brands in the Category[*4]					94%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					74%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Renal cell carcinoma (RCC): The total incidence of cancer related to kidney and other urinary organs in Japan was estimated to be about 30,600 in 2021 as per National Cancer Center, Japan. Further, it is estimated that the incidence in men is expected to be nearly double than women. RCC is a kidney cancer that originates in the lining of the proximal convoluted tubule. RCC is the most common type of kidney cancer in adults, responsible for over 90% of cases.

Cabometyx was launched in May 2020 for the treatment of RCC. Its label was expanded in late November to add a new indication of hepatocellular carcinoma (HCC). Cabometyx will compete against similar drugs such as Novartis' Afinitor (FY 20 sales ¥12.4 Billion). It has also shown robust clinical data with immune checkpoint inhibitors (ICIs) – Opdivo and Tecentriq. The Japan rights were acquired by Takeda in 2017 from Exelixis.

MOA: Cabometyx is a 'tyrosine kinase inhibitor'. The enzymes 'tyrosine kinases' are found in certain receptors in cancer cells. They are involved in activating processes that include cell division and the growth of new blood vessels to nourish the cancer cells. By blocking the activity of these enzymes, tyrosine kinase inhibitors reduce the growth and spread of the cancer.

Clinical Data: For advanced RCC, finding from two major pivotal studies sported its approval. In one major study, it was compared against everolimus. In this study, which involved 658 adults with advanced RCC with prior treatment with a vascular endothelial growth factor (VEGF) inhibitor, Cabometyx was effective at prolonging progression-free survival (PFS) vs. everolimus (7.4 months vs. 3.8 months). In addition, Cabometyx also showed improved overall survival (OS) by an average of 21.4 months (vs. 16.5 months). In the second major study it was compared against sunitinib (total 157 patients). In this study, PFS with Cabometyx was an average of 8.6 months vs.5.3 months with sunitinib.

Developments post approval: In September 2020, Takeda and Chugai announce to develop combination therapy of Cabometyx with another anti programmed cell death 1 - ligand 1 (PD-L1) antibody Tecentriq in multiple cancer types by joining a global PIII studies.

The combination of Cabometyx with programmed cell death1 (PD1) inhibitor Opdivo for RCC was filed October, 2020. The filing was backed on global PIII CheckMate-9ER study, where the combination demonstrated a significant improvement in its primary endpoint PFS, and secondary endpoint OS vs. sunitinib in patients with previously untreated advanced or metastatic RCC.

Cabpirin – Combining P-CAB with LDA to Improve Adherence and Reduce Side-Effects

Drug Profile - Cabpirin					
Molecule Type	Small Molecule (Combination)	Molecule	Aspirin + Vonoprazan fumarate	Brand	CABPIRIN
Launch Month	May 2020	Form	Tablet	Strength	100 mg (Aspirin) & 10 mg (Vonoprazan fumarate)
Therapeutic Classes[*2] (2nd level)	Antithrombotic Agents	Mechanism of Action (MOA)	Platelet aggregation inhibitory effect / Gastric acid secretion inhibitory effect		
Therapeutic Classes[*2] (3rd level)	Platelet Aggregation Inhibitors				
Indication	For inhibiting thrombus/Embolization formation in the following diseases or post-operations (for use only in patients with a history of gastric ulcer or duodenal ulcer)/Angina pectoris (chronic stable angina, unstable angina), myocardial infarction, or ischemic cerebrovascular disease (transient ischemic attack [TIA], cerebral infarction)/coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA)				
Manufacturer	Takeda Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Takeda Pharmaceutical
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥130.3	Peak Sales (Predicted[*3])	¥12.1 Billion
Total Sales of the Therapeutic Category[*4]					¥105.2 Billion
Contribution of the Brands in the Category[*4]					24%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					31%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Cabpirin is combination tablet of vonoprazan fumarate and low-dose aspirin (LDA). This once daily oral formulation is co-promoted by Takeda and Otsuka. Vonoprazan is a therapeutic agent for acid-related diseases which belongs to a newer class known as 'potassium-competitive acid blockers (P-CAB)'.

Cabpirin is indicated for the risk reduction of formation of thrombosis/embolism due to the following disease or after operation (limited to the patients with history of gastric ulcer or duodenal ulcer) – 1.) Angina (chronic stable angina, unstable angina), myocardial infarction, ischemic cerebrovascular disease ((transient ischemic attack (TIA), cerebral infarction)), and 2.) After coronary artery bypass graft (CABG) or percutaneous transluminal coronary recanalization (PTCA).

Logic behind the combination: LDA is commonly prescribed to prevent the formation of thrombi in patients with ischaemic heart or cerebrovascular diseases. However, LDA sometimes causes gastrointestinal (GI) mucosal injury by inhibiting the biosynthesis of intrinsic prostaglandin. This particularly aggravate the complication in the patients with a history/existence of gastric or duodenal ulcer. To address this, proton pump inhibitors (PPIs) are often co-prescribed with LDA in such patients. However, some patients still experience ulcer recurrence, indicating that PPIs are not adequately effective.

Vonoprazan inhibits H^+, K^+-ATPase in gastric parietal cells at the final stage of the acid secretory pathway in a K^+-competitive and reversible manner. Since its debut in 2015 in Japan, Vonoprazan has greatly preferred by many doctors over already-existing PPIs. Vonoprazan is considered offer a number of advantages over them – 1.) it provides potent and long-lasting inhibition of gastric acid secretion, and hence its efficacy is considered to be superior to that of existing PPIs. 2.) it does not require an acidic environment for activation and is acid stable, which eliminates the need for an enteric-coated formulation. Whereas existing PPIs require approximately 3–5 days to achieve maximal inhibition of gastric H^+, K^+-ATPase, 3.) vonoprazan exerts a near-maximum inhibitory effect from the first dose and remains effective for 24 hours.

By combining LDA with vonoprazan, it is expected to reduce the recurrence of gastric and duodenal ulcers (which are potential side effects of LDA), and improve the compliance in patients who need to take both.

Market Landscape: It is assumed that LDA is prescribed concomitantly for with PPIs. However, the only combination of LDA with PPI currently available in Japan is Takelda. Launched in 2014, it is combination of LDA (100 Mg) with PPI lansoprazole (15mg) and it posted a sales of ¥6.2 Billion (-16.4% YoY) in 03/2021. Cabpirin will directly compete with Takelda and will be positioned as a convenient and superior alternate to concomitant use of LDA with PPIs or P-CAB. Cabpirin had already posted ¥2.1 Billion in FY 03/2021.

Vonoprazan was launched in Japan in February, 2015 under the brand name 'Takecab' for the treatment of acid-related disorders. The total antiulcer market is ¥341.6 Billion (-1.3% YoY) 03/2021, and while sales of all major products into the therapeutic category is declining due to generics (GE) substitution, its only Takecab which positing growth (¥100.5 Billion, 14.2% YoY%) and holding highest market share as well (30%). It was well acceptance by doctors due to its novel mechanism of action, fast onset and longer duration of action, and marketing efforts. Takecab is also one of top-10 biggest brands in Japan by sales, and likely to maintain its position for the next few years.

Dayvigo - A New Japan Originated Drug for Insomnia

Drug Profile - Dayvigo					
Molecule Type	Small Molecule	Molecule	Lemborexant	Brand	DAYVIGO
Launch Month	July 2020	Form	Tablet	Strength	2.5 mg, 5 mg, 10 mg
Therapeutic Classes[*2] (2nd level)	Psycholeptics	Mechanism of Action (MOA)	Orexin receptor antagonism		
Therapeutic Classes[*2] (3rd level)	Hypnotics/Sedatives				
Indication	Insomnia				
Manufacturer	Eisai	Marketer	Eisai	Originator/s	Eisai
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥57.3, ¥90.8, ¥136.2	Peak Sales (Predicted[*3])	¥17.8 Billion
Total Sales of the Therapeutic Category[*4]					¥103.3 Billion
Contribution of the Brands in the Category[*4]					67%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					33%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Insomnia: It is a common but often neglected health conditions which severely affects quality of life and may lead to other health complications. Studies worldwide report that anywhere between 10% and 30% of adults struggle with chronic insomnia. A higher social burden of insomnia in Japan is well known. In Japan, according to the MHLW, it is estimated that more than 20 million people suffer from some kind of sleep disorder and this number is expected to increase even further. Organisation for Economic Co-operation and Development (OECD) statistics via the Gender Data Portal 2019 shows that Japan has the minimum daily average sleep among member countries. As per the OECD data, Japan has an average daily sleep of 442 minutes vs. 528 minutes in the United States, 508 minutes in Britain, 513 minutes in France, 516 minutes in Spain, and 542 minutes in China.

Two types of neurotransmitters in the brain are considered to play role in regulating the sleep-wake cycle – the Sleep Neurotransmitters (which are responsible for inducing sleep) and the Wake Neurotransmitters (who signal to wake-up and stay awake). Normally, sleep occurs when the wake neurotransmitters turn down and the sleep neurotransmitters ramp-up and take over. While, many factors contribute to insomnia, it is believed that imbalance in activity of these neurotransmitters leads to insomnia.

Market Landscape: The total market for Hypnotics/Sedatives was ¥103.3 Billion (2.5% YoY) in FY 03/2021. Belsomra (¥33.7 Billion, 12% YoY), Lunesta (¥17.1 Billion, 8.4% YoY), and Rozerem (¥14.7 Billion, 6.3% YoY) lead the market.

There are a number of drugs approved for Insomnia, however unmet need is still felt high in this class mainly due to long term safety issues. Search for effective and safer drugs for Insomnia continues. In 2005 in the US, Rozerem approval was claimed as the first drugs with reportedly no risk of abuse or dependence in long-term use, and hence it was considered a milestone approval. It is a melatonin receptor agonist and supposed to act at the MT_1 and MT_2 receptors to promote sleep and exert an effect on circadian rhythms. Lunesta, launched in April 2012, is a non-benzodiazepine type GABA agonist that is believed to enhance GABA activity while exerting hypnotic and sedative effects.

Position of Dayvigo: It is a competitive antagonist that binds to two subtypes of orexin receptors & block their binding with wake-promoting neuropeptides orexin A and orexin B. Belsomra also works through similar mechanism. These two drugs are considered different than others because they exert their effect by blocking wakefulness rather than promoting sleepiness.

The approval was backed on the data from two global Ph III trials dubbed as SUNRISE1 & SUNRISE 2, both enrolling a total of about 2,000 patients. In SUNRISE 1, Dayvigo achieved its primary and secondary objectives—e.g., change from baseline in both sleep onset and sleep maintenance variables vs. placebo and zolpidem extended-release (active comparator) in patients with insomnia. While in SUNRISE 2, it resulted in a statistically significant improvement in subjective sleep onset latency vs. placebo (primary end point).

Multiple 'HIF-PHIs' Debuted for Renal Anemia Treatment

Drug Profile - Duvroq, Vafseo, Enaroy					
Molecule Type	Small Molecule	Molecule	Daprodustat	Brand	Duvroq
			Vadadustat		VAFSEO
			Enarodustat		ENAROY
Launch Month	August 2020	Form	Tablet	Strength	1 mg, 2 mg, 4 mg, 6 mg
					150 mg, 300 mg
	December 2020				2 mg, 4 mg
Therapeutic Classes*2 (2nd level)	Anti-anaemic Preparations	Mechanism of Action (MOA)	Inhibitory effect on hypoxia inducible factor prolyl hydroxylase (HIF-PH)		
Therapeutic Classes*2 (3rd level)	HIF-PH Inhibitors				
Indication	Renal anemia				
Manufecturer	GlaxoSmithKline	Marketer	Kyowa Kirin	Originator/s	GlaxoSmithKline
	Mitsubishi Tanabe Pharma		Mitsubishi Tanabe Pharma		Procter & Gamble
	JAPAN TOBACCO		TORII PHARMACEUTICAL		JAPAN TOBACCO
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥105.4, ¥185.8, ¥327.4, ¥456.1	Peak Sales (Predicted*3)	¥11.1 Billion
			¥213.5, ¥376.2		¥14.1 Billion
			¥275.9, ¥486.1		¥1.5 Billion
Total Sales of the Therapeutic Category*4					¥2.2 Billion
Contribution of the Brands in the Category*4					100%
Hospital (≥100 beds) Sales Ratio in the Category*4					34%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Three New Hypoxia-Inducible Factor Prolyl Hydroxylase Inhibitors (HIF-PHIs) were Approved in 2020: Evrenzo (Roxadustat, by Astellas, licensed from FibroGen) was the first HIF-PHI, launched in November-2019 for the treatment for renal anemia in dialysis patients. It later expanded label for non-dialysis patients in November-2020. In 2020, three new HIF-PHIs were launched - Duvroq, Vafseo & Enaroy, as the second group of entrants in the space after Evrenzo. Currently they all are approved for the treatment of renal anemia for use in both dialysis and non-dialysis patients.

Renal Anemia: Renal anaemia results from malfunctioning kidneys. The kidneys secrete a hormone called erythropoietin (EPO) which stimulates the bone marrow to produce red blood cells. In patients with malfunctioning kidneys, such as those requiring renal dialysis, or patients receiving bone marrow depleting chemotherapy typically experience severe anaemia. The majority of patients with chronic anaemia requiring treatment are those with damaged or failing kidneys. EPO, its derivatives, and erythropoiesis-stimulating agents (ESAs) are used to treat renal anemia. However, they are notorious for side-effects and have to be administered parenterally. The EPO market is also highly genericized globally.

Japan Statistics: As per, Japanese Society for Dialysis Therapy Renal Data Registry (JRDR), a total of 344,640 patients (2,732 per million) were receiving dialysis treatment in Japan in 2019. In other words, one in every 366 citizens was receiving dialysis treatment. This is very high figure compared to the other developed nations. The most common causes for dialysis in Japan were identified as diabetes (39.1%), chronic glomerulonephritis (25.7%), and sclerosis (11.4%), by JRDR in 2019.

MOA and comparison to ESA: HIF-PHIs stabilize the HIF complex and stimulate endogenous EPO production even in end-stage chronic kidney disease (CKD) patients. They improve the iron mobilization to the bone marrow and can be given orally, which is beneficial for non-dialysis patients in particular. Hence, HIF-PHIs are considered alternate and a promising approach for treating renal anemia.

HIF-PHIs appears to offer certain advantages over the conventional EPOs & ESAs which are known for a risk of cardiovascular events due to rapid rises in ESA level in blood and some other complications. HIF-PHIs reportedly maintain the level of EPO concentrations under the required range. However, HIF-PHIs are yet to prove their long-term safety to establish themselves as standard treatment for renal anemia.

Japanese Nephrology Society's (JNS) Recommendation on Use of HIF-PHIs: In October-2020, the JNS published recommendation on the proper use of HIF-PHIs in the treatment of renal anemia. The recommendations leave it of doctor's decision whether to select ESAs or HIF-PHIs, depending on the individual patient's condition. It mentions that ESAs or HIF-PHIs should be administered after adequate iron supplementation. It also mentions the target hemoglobin values of 11-13 g/dL in non-dialysis patients and 10-12 g/dL in patients on dialysis as reference values.

Market Landscape: With launch of Bayer Yakuhin's molidustat was in April-2021, now there are five HIF-PHIs on market and currently all of them are indicated for the treatment of renal anemia in both dialysis and non-dialysis patients. The first entrant Evrenzo posted ¥1.2 Billion in FY 2020. However, the rest of HIF-PHIs are likely to pick-up soon and competition in the space will heat-up. The combined peak-sales potential of all five HIF-PHIs is totaling at ¥42 Billion.

Enerzair – the first triplet inhaled therapy for bronchial asthma

Drug Profile - Atectura, Enerzair					
Molecule Type	Small Molecule (Combination)	Molecule	Indacaterol + Mometasone[*5]	Brand	ATECTURA
			Indacaterol + Glycopyrronium + Mometasone[*6]		ENERZAIR
Launch Month	August 2020	Form	Inhalation	Strength	Low Dose[*7], Middle Dose[*7], High Dose[*7]
					Middle Dose[*8], High Dose[*8]
Therapeutic Classes[*2] (2nd level)	Anti-asthma & COPD Products	Mechanism of Action (MOA)	β2 Receptor agonism (selective) (long acting) / Antiinflammatory effect		
Therapeutic Classes[*2] (3rd level)	β2-agonist & Corticoid Combinations		β2 Receptor agonism (selective) (long acting) / Anticholinergic effect (long acting) / Antiinflammatory effect		
	Anticholinergics in Combination with β2-agonists				
Indication	Bronchial asthma (in patients not adequately controlled with a combination of an inhaled corticosteroid and a long-acting inhaled β2-agonist)				
	Bronchial asthma (in patients not adequately controlled with a combination of an inhaled corticosteroid, a long-acting inhaled β2-agonist, and a long-acting inhaled anticholinergic agent)				
Manufecturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	Novartis International, Schering-Plough
					Sosei Heptares, Vectura
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥157.8, ¥173.1, ¥192.2	Peak Sales (Predicted[*3])	¥8.2 Billion
	Applied		¥291.9, ¥333.4		¥25.1 Billion
Total Sales of the Therapeutic Category[*4]					¥101 Billion, ¥27.3 Billion
Contribution of the Brands in the Category[*4]					72%, 100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					21%, 32%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.
[*5]...Indacaterol acetate + Mometasone furoate
[*6]...Indacaterol acetate + Glycopyrronium bromide + Mometasone furoate
[*7]...Low Dose = Indacaterol 150 mg + Mometasone 80 mg, Middle Dose = Indacaterol 150 mg + Mometasone 160 mg, High Dose = Indacaterol 150 mg + Mometasone 320 mg
[*8]...Middle Dose = Indacaterol 150 mg + Glycopyrronium 50 mg + Mometasone 80 mg, High Dose = Indacaterol 150 mg + Glycopyrronium 50 mg + Mometasone 160 mg

Bronchial asthma affects an estimated 358 million people worldwide. In Japan, as per the patient survey conducted by the Ministry of Health, Labour and Welfare in 2017, there were about 1.12 million patients with bronchial asthma.

Market Landscape: The treatment paradigm for bronchial asthma and chronic obstructive pulmonary disease (COPD) has been significantly changed in the recent years with the introduction of a number of new drugs, combinations, and also revised guidelines. The combination of Inhaled Corticosteroids (ICS) and Long-Acting Beta2-Agonist (LABA) have long maintained the highest market share with Symbicort and Adoair being the leaders in the segment. Thereafter, a surge of LABA+LAMA (Long-Acting Muscarinic Antagonist) combinations was observed in the market. ICS+LABA+LAMA triple combinations are relatively new. In fact by 2019, there were only two triplet combination were available for COPD (and none for bronchial asthma) - Breztri (AstraZeneca) was first triple drug combination regimen of ICS+LABA+LAMA followed by Trelegy (GSK).

The total market for ICS, LAMA and LABA (any combination) was ¥128.3 Billion (-11.3% YoY) in FY 03/2021.

Positioning of Enerzair: It is the first triplet inhaled therapy for bronchial asthma combining LAMA+LABA+ICS and it had the highest forecasted sales (¥25.1 Billion in the 10th year) among all listed drugs in August 2020. While LAMA, LABA, and ICS are widely used in combination to treat bronchial asthma, there were no triple combination in a single device indicated for bronchial asthma until Enerzair. In November 2020, Trelegy also received label expansion for bronchial asthma. Trelegy is subject to the cost-effectiveness analysis (CEA), and the price of Enerzair was adjusted against Trelegy as the comparator drug (the “H5” category).

Atectura, an LABA/ICS dual bronchial asthma therapy excluding glycopyrronium bromide from Enerzair was also launched in August 2020. Its forecasted peak sales stands at ¥8.2 Billion in the 10th year. In global Ph III IRIDIUM trial, Enerzair was found superior to Atectura in improving the lung function of patients whose bronchial asthma was uncontrolled with LABA/ICS standard-of-care treatment.

Enhertu: ADC fetching attention due to its Broad potential in HER2+ Cancers

Drug Profile - Enhertu					
Molecule Type	Antibody Drug Conjugate	Molecule	Trastuzumab deruxtecan (Genetical recombination)	Brand	ENHERTU
Launch Month	May 2020	Form	Injection	Strength	100 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on signal transduction, antibody dependent cellular cytotoxicity, inhibitory effect on type I DNA topoisomerase		
Therapeutic Classes[*2] (3rd level)	Monoclonal Antibody Antineoplastics				
Indication	Unresectable or recurrent HER2-positive breast cancer in patients who have previously been treated with chemotherapy (for use only if refractory or intolerant to standard therapies)				
Manufecturer	DAIICHI SANKYO	Marketer	DAIICHI SANKYO	Originator/s	DAIICHI SANKYO
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥165,074	Peak Sales (Predicted[*3])	¥12.9 Billion
Total Sales of the Therapeutic Category[*4]					¥711.1 Billion
Contribution of the Brands in the Category[*4]					78%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					97%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Enhertu was one of the most important candidates among newly approved cancer candidates in 2020. Although, its peak sales was put at ¥12.9 billion, it only covers the initial indication of third-line use in Human Epidermal growth factor Receptor 2 (HER2) positive breast cancer. Enhertu is antibody-drug conjugate (ADC) and underway development with exciting clinical data for a number of indications. These include -lung cancer and colorectal cancer etc. Enhertu is considered to have high potential to greatly exceed this initial projection.

HER2+ Breast Cancer: HER2 is a protein that plays role in cells growth. In HER2-positive (HER2+) breast cancer, HER2 is present in abundance in the cancer cells, which leads to their rapid growth. HER2+ inoperative breast cancer means it cannot be removed by surgery. Recurrent cancer means the cancer originally had has come back. It can develop in the same place it started or in a new part of the body. Enhertu is approved for HER2+ inoperative or recurrent breast cancer following two or more prior anti-HER2 based regimens.

MOA: Enhertu (Fam-trastuzumab deruxtecan-nxki) is an ADC which carries an antibody (a humanized anti-HER2 Immunoglobulin G1 (IgG1)) attached to a small molecule (DXd, which is a topoisomerase I inhibitor) by a cleavable linker. After binding to HER2 on cancer cells, fam-trastuzumab deruxtecan-nxki enters cancerous cells though intracellular linker cleavage by lysosomal enzymes. Upon release, the membrane permeable DXd causes deoxyribonucleic acid (DNA) damage and apoptotic cell death.

Global Status: Enhertu was initially approved in December 2019 by the USA Food and Drug Administration (FDA) for unresectable or metastatic HER2-positive breast cancer who have received two or more prior anti-HER2 based regimen. In January-2021, the US FDA also granted it approval for an additional indication of certain patients with HER2-positive gastric cancer. It is the first HER2-directed drug approved for gastric cancer in a decade. The approval was backed on PII DESTINY-Gastric01 study (which was conducted in in Japan and South Korea), where Enhertu demonstrated significant overall survival (OS) vs. chemotherapy in advanced gastric cancer or gastroesophageal junction (GEJ) adenocarcinoma.

In January 2021, the European Medicines Agency's (EMA) also grated conditional approval for Enhertu as a monotherapy for the treatment of adult patients with unresectable or metastatic HER2-positive breast cancer who have received two or more prior anti-HER2 based regimens.

New Clinical Evidence Indicate its Expanded Use beyond Breast Cancer & Gastric Cancer: In May 2020, Enhertu received US Breakthrough Therapy Designation for HER2- mutant metastatic non-small-cell lung cancer (NSCLC). In the interim results of the DESTINY-Lung01 Phase II trial, it demonstrated meaningful clinical activity for patients with HER2-mutant NSCLC, with a confirmed objective response rate of 61.9%. Additionally, an interim analysis presented in January 2021 at the World Conference on Lung Cancer showed preliminary evidence of anti-tumour activity for Enhertu in patients with HER2-overexpressing metastatic NSCLC as well. It is also being evaluated immune checkpoint inhibitor Imfinzi in HER2- mutant metastatic NSCLC.

Long Awaited Entresto Made Its Japan Debut as First Drug for Chronic Heart Failure

Drug Profile - Entresto					
Molecule Type	Small Molecule	Molecule	Sacubitril valsartan sodium hydrate	Brand	Entresto
Launch Month	August 2020	Form	Tablet	Strength	50 mg, 100 mg, 200 mg
Therapeutic Classes[*2] (2nd level)	Agents Acting on the Renin-Angiotensin System	Mechanism of Action (MOA)	Inhibitory effect on angiotensin receptor neprilysin		
Therapeutic Classes[*2] (3rd level)	Angiotensin-II Antagonists, Combinations				
Indication	Chronic heart failure (only for patients who are receiving the standard treatment for chronic heart failure)				
Manufecturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	Novartis International
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥65.7, ¥115.2, ¥201.9	Peak Sales (Predicted[*3])	¥14.1 Billion
Total Sales of the Therapeutic Category[*4]					¥102.7 Billion
Contribution of the Brands in the Category[*4]					44%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					16%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Positioning & Market Landscape: Novartis Pharma launched Entresto (sacubitril valsartan sodium hydrate) in Japan on August 2020 as the first drug to offer a treatment option for heart failure with preserved ejection fraction (HFpEF), where unmet need is high. Entresto has been considered to carry a global mega-blockbuster potential. The number of heart failure patients in Japan was estimated to be about 1.2 million in 2020, and it is expected to grow in future. Further, heart failure with reduced ejection fraction (HFrEF) and HFpEF are reported to account for roughly half of heart failure patients.

Currently, angiotensin converting enzyme inhibitors (ACE-Is), angiotensin II receptor blockers (ARBs), mineralocorticoid receptor antagonists (MRAs), beta blockers etc. are used for HFrEF, while there is no drug available for HFpEF. The approval was based on three major PIII trials named - PARADIGM-HF, PARALLEL-HF and PARAGON-HF – which provided convincing evidences of Entresto. As per the documents summited at the Central Social Insurance Medical Council (Chuikyo), it is supposed to generate ¥14.1 Billion peak sales in 10th year of launch. However, this projection is very modest and considered way below its potential. In Japan it has been co-promoted with Otsuka.

MOA: Entresto is the first drug in a class called angiotensin receptor neprilysin inhibitors (ARNIs). It alleviates cardiac load by activating a protective neurohormonal mechanism, while suppressing the overactivity of the renin-angiotensin-aldosterone system (RAAS).

Heart Failure (HF): Heart failure is a general term for the condition where heart's ability to pump sufficient blood to meet the body's requirements is compromised. This may happen due to weakened heart muscles or other complications, including aging. Typically, the volume of blood pumped out by the heart is determined by two main characteristics – 1.) the contraction of the heart muscle (i.e., how well the heart squeezes), and 2.) the filling of the heart chambers (i.e. how well the heart relaxes and fills with blood). Left ventricular ejection fraction (LVEF) is a measurement for it, which tells the percentage of amount of blood pumped out from the left-ventricle vs. the left ventricular volume in diastole, and normally it is greater than 50%. If the LVEF is decreased due to weakened heat muscles, the condition is HFrEF, and when it is result of left ventricles inability to fill properly due to its stiffness, the condition is HFpEF.

Global Status & Outlook: In the US, it was first launched in 2015 for HFrEF, and has already been approved in more than 100 countries worldwide. In other countries, it was only approved for the treatment of HFrEF. While Japan became the first country to approve it not only for HFrEF but also for heart failure with HFpEF, i.e., for 'chronic heart failure (CHF)' without HFrEF/HFpEF subtype limitations. In February 2021, Entresto was approved to expand its indication by the US Food and Drug Administration (FDA) for HFpEF for patients whose LVEF is below normal. As per Novartis, about 5 million of the 6 million Americans diagnosed with CHF can be treated now with Entresto. Novartis reported its global revenue $2.5 Billion in 2020 and it is expected to carry a $5 Billion potential globally.

Rinvoq and Jyseleca - Impact of JAK inhibitors on the RA therapy landscape is Increasing

Drug Profile - Rinvoq, Jyseleca					
Molecule Type	Small Molecule	Molecule	Upadacitinib hydrate	Brand	RINVOQ
			Filgotinib maleate		Jyseleca
Launch Month	April 2020	Form	Tablet	Strength	7.5 mg, 15 mg
	November 2020				100 mg, 200 mg
Therapeutic Classes*2 (2nd level)	Anti-inflammatory & Anti-rheumatic Products	Mechanism of Action (MOA)	Inhibitory effect on Janus kinases (JAK)		
Therapeutic Classes*2 (3rd level)	Specific Anti-rheumatic Agents				
Indication	For the treatment of patients with rheumatoid arthritis who have had an inadequate to the existing treatments (including prevention of structural damage to joints)				
Manufecturer	Abbvie	Marketer	Abbvie	Originator/s	Abbott Laboratories
	Gilead Sciences		Eisai		Galapagos NV
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥2,550.9, ¥4,972.8	Peak Sales (Predicted*3)	¥28.3 Billion
					¥25.8 Billion
Total Sales of the Therapeutic Category*4					¥93.2 Billion
Contribution of the Brands in the Category*4					81%
Hospital (≥100 beds) Sales Ratio in the Category*4					48%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Positioning & Market Landscape: Janus kinase (JAK) enzyme is found in immune cells (a total of four JAK proteins identified are JAK1, JAK2, JAK3, and TYK2). They are part of the cellular pathway involved in the production of inflammatory cytokines and proinflammatory factors. The rheumatoid arthritis (RA) market in Japan is very agile and witnessing a fierce battle among oral JAK inhibitors as well as biosimilars. JAK inhibitors are considered to carry the potential to greatly impact on the RA landscape, as they offer the advantage of oral administration and marginally better clinical profile (they are also likely to be cost effective in future) versus biologics.

With launch of Rinvoq and Jyseleca in 2020, there are now total five JAK inhibitors currently available in Japan for RA and they together posted ¥36.9 Billion (41% YoY). Xeljanz (against JAK1, 2, 3; ¥18.8 Billion, 19% YoY), Olumiant (against JAK1, 2; ¥15.3 Billion, 50% YoY), and Smyraf (JAK1, 2, 3; ¥1.8Billion, launched in July 2019) were already in the market and they all are growing. All of the JAK inhibitors are approved for RA patients who had an inadequate response to conventional therapies (at least one of antirheumatic agents or others including methotrexate (MTX)).

New Guidelines will enhance uptake of JAK-inhibitors in RA treatment: RA treatment guidelines were revised by the 'The Japan College of Rheumatology (JCR)' in April-2021. This was the first revision by the JCR in past six year with some important updates. The revision recommends JAK inhibitors as 'second-line' treatment option, which were earlier recommended as 'third-line' treatment. It is also important to note that the guidelines place both biologics and JAK inhibitors at par as second-line treatment options. However, it prefers use of biologics before trying JAK inhibitors. Some key opinion leaders (KOLs) believes that this is due to lack of adequate safety data in Japanese patients. JAK-inhibitors are relatively still a new class and as they accumulate more clinical evidences, their position in RA treatment paradigm may strengthen in future.

Entry of Rinvoq and Jyseleca in 2020 changes the JAK inhibitors' landscape: Rinvoq is intended for moderate to severe RA patients as a monotherapy or in combination with conventional synthetic disease modified anti-rheumatic-drugs (DMARDs). It is considered to acquire a strong position in the RA market and in further future indications, based on its robust data. AbbVie is expecting ¥28.3 billion from the current RA indication alone. Although Rinvoq is fourth JAK inhibitor in the class, it demonstrated a higher clinical remission rate versus Humira (adalimumab) in clinical trials, which is also owned by AbbVie. KOLs see a possibility of Rinvoq being used in the earlier lines of RA treatments than antibodies.

With approval for RA (in April 2020) and later in psoriatic arthritis (in May 2021), Rinvoq is eying a total of eight indications in Japan. It was also approved for atopic dermatitis (AD) in August 2021. In addition, it is under PIII development for axial spondyloarthritis (SpA), giant cell arteritis, Takayasu arteritis, Crohn's disease (CD), and ulcerative colitis (UC). It is also being investigated for hidradenitis suppurativa in PII. Among these indications, AD carries a higher market potential after RA.

Jyseleca: has shown to have a high selectivity for JAK1, which is involved in RA inflammatory signaling. It was the fifth oral JAK inhibitor for RA, approved in September 2020. Jyseleca was approved RA in patients who have had an inadequate response to conventional therapies. Eisai is responsible for the marketing of Jyseleca in Japan, while the owner Gilead is jointly promoting it.

In April 2021, Gilead also filed an NDA in Japan for its additional indication for the treatment of moderately to severely active UC. NDA bas backed by PIIb/III study SELECTION, where Jyseleca demonstrated efficacy and safety for the induction and maintenance of remission in biologic-naïve and biologic-experienced patients with moderate to severe active UC.

Lokelma - the first non-polymer inorganic cation exchange compound for Hyperkalemia

Drug Profile - Lokelma					
Molecule Type	Small Molecule	Molecule	Sodium zirconium cyclosilicate hydrate	Brand	LOKELMA
Launch Month	May 2020	Form	Powder	Strength	5 g, 10 g
Therapeutic Classes[*2] (2nd level)	All Other Therapeutic Products	Mechanism of Action (MOA)	Highly selective K+ extraction effect by the microporous structure of inorganic crystals		
Therapeutic Classes[*2] (3rd level)	Hyperkalaemia/Hyperphosphataemia Products				
Indication	Hyperkalemia				
Manufecturer	AstraZeneca	Marketer	AstraZeneca	Originator/s	ZS Pharma
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥1,095.2, ¥1,601	Peak Sales (Predicted[*3])	¥15.8 Billion
Total Sales of the Therapeutic Category[*4]					¥51.5 Billion
Contribution of the Brands in the Category[*4]					46%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					34%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Hyperkalemia: is a medical condition characterized by high potassium level in blood. Potassium plays important role in proper functioning of nerves and muscles, including heart. Excess of potassium in blood can be dangerous and may lead to serious heart problems among other complications. The normal serum potassium level is considered to be between 3.6 to 5.2 Milliequivalents per litre (mEq/L). A serum potassium concentration above this is considered Hyperkalemia. Levels higher than 7 mEq/L can lead to significant hemodynamic and neurologic consequences, whereas levels exceeding 8.5 mEq/L can cause respiratory paralysis or cardiac arrest and can quickly be fatal.

Advanced kidney disease is a common cause of hyperkalemia. Kidneys maintain the required level of potassium by balancing its excretion/retention during the urine filtration process. During the early stages of kidney disease, the kidneys can often make-up for high potassium, but as kidney function gets worsen, they may not be able to remove enough potassium.

MOA and Indication: LOKELMA belongs to the 'Potassium (K^+) binder' class with certain claimed advantages over other candidates from the same class. K^+ binders are cationic exchange resins that enhance fecal excretion of potassium. LOKELMA is a non-absorbed sodium hydrogen zirconium silicate hydrate which preferentially captures K^+ and exchanges it for hydrogen and sodium. It increases fecal K^+ excretion through binding of K^+ in the lumen of the GI tract and thereby reduces the free K^+ concentration in the GI lumen and lowering serum K+ level.

In overseas market, other K^+ binders include Sodium polystyrene sulfonate (SPS; with brands like Kayexalate, Kalexate etc.) and Patiromer (e.g. Veltassa). SPS binds K^+ mainly in the large intestine and exchanges sodium for K^+ and decreases K^+ level by approximately 0.5-1 mEq/L. Patiromer is a nonabsorbed cation exchange polymer that contains a calcium-sorbitol counterion. It increases fecal potassium excretion by binding potassium in the lumen of the GI tract. Due to delayed onset of action, they are not used for emergency-use in hyperkalemia. LOKELMA use is also limited to non-emergency treatment of hyperkalemia due to its delayed onset of action. It can be used both in Hemodialysis and Non-hemodialysis type of adult patients.

Japan Market Landscape and positioning of LOKELMA: In Japan, SPS is sold as Kayexalate (Torii Pharma, FY 03/2021 sales ¥2.1 Billion). It was originally launched on 2007 in powder form, and as a dry-syrup formulation 2011 which is still a 'non-price maintenance premium (PMP) brand', and generate most of its sales. 'Kaliserum Na' is its generic version from Fuso Pharma with almost negligible sales. Fuso Pharma also launched 'Calcium Polystyrene Sulfonate "FUSO" Powder' which has a tiny ¥ 0.1 Billion sales in FY 03/2021. Patiromers (sold as Veltassa in overseas) is not available in Japan.

LOKELMA is Japan's first non-polymer inorganic cation exchange compound indicated for Hyperkalemia. Lokelma offers a relative flexibility in its concomitant use with Renin-angiotensin-aldosterone system (RAAS) inhibitors. Major clinical associations have recommended RAAS inhibitor therapy for patients with diabetes, chronic kidney disease (CKD), and heart failure (HF), respectively, and hyperkalemia is a common complication in those patients. In a study of almost 1 million subjects, hyperkalemia was an independent risk factor for all-cause mortality.

Although the sales of its closest competitor SPS is tiny in Japan, based on its distinct advantage, Lokelma is expected to rack up sales of ¥15.8 billion in the 10th year on the market.

Noxafil – azole antifungal agent for mycosis

Drug Profile - Noxafil					
Molecule Type	Small Molecule	Molecule	Posaconazole	Brand	NOXAFIL
Launch Month	April 2020	Form	Tablet	Strength	100 mg
	July 2020		Injection		300 mg
Therapeutic Classes[*2] (2nd level)	Systemic Agents for Fungal Infections	Mechanism of Action (MOA)	Inhibitory effect on cell membrane synthesis		
Therapeutic Classes[*2] (3rd level)	Systemic Agents for Fungal Infections				
Indication	For the prophylaxis of deep mycosis in hematopoietic stem cell transplantation recipients or patients with hematologic malignancy who are predicated to decrease neutrophil/for the treatment of the following mycoses: fusariosis, mucormycosis, coccidioidomycosis, chromoblastomycosis, and mycetoma.				
Manufacturer	MSD	Marketer	MSD	Originator/s	Schering-Plough
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥3,109.1	Peak Sales (Predicted[*3])	¥11.2 Billion
			¥28,508		¥710 Million
Total Sales of the Therapeutic Category[*4]					¥35.1 Billion
Contribution of the Brands in the Category[*4]					43%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					70%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

The active ingredient in Noxafil, posaconazole, belongs to the triazole category of drugs. It works by preventing the formation of ergosterol, which is an important part of fungal cell walls. In absence of ergosterol, the fungus dies or is prevented from spreading.

Noxafil was evaluated in various overseas clinical studies, where it proved its effectiveness in a number of fungal infections including invasive aspergillosis, fusariosis, chromoblastomycosis or mycetoma, coccidioidomycosis, oropharyngeal candidiasis etc.

It is indicated for 1) the prevention of deep-seated mycosis in patients undergoing hematopoietic stem cell transplantation and patients with hematologic malignancies who are likely to have neutropenia, and 2) mycosis (fusariomycosis, mucormycosis, coccidioidomycosis, chromoblastomycosis, and mycetoma).

Noxafil approval has been actually delayed in Japan. It had received marketing approvals in the US and EU in 2006 and 2005 respectively. Its oral suspension had received a category 1 recommendation (highest rating) for preventing certain invasive fungal infections in high-risk cancer patients in the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology in 2007. Similar products e.g., fluconazole and voriconazole are in the market for over 10 years, so it was priced under the cost-based method.

Market Landscape: Total sales of 'systemic agents for fungal infections' class were ¥35.1 Billion (-19% YoY) in FY 03/2021. Fluconazole (including its phosphate pro-drug fosfluconazole) and voriconazole posted ¥3.6 Billion (-22% YoY) and ¥7.5 Billion (-23% YoY) respectively. The market is dominated by Long-Listed Products (LLP) and Generics (GE), which capture about 57% of the market.

Nubeqa - New Anti-Androgen Drug for nmCRPC

Drug Profile - Nubeqa					
Molecule Type	Small Molecule	Molecule	Darolutamide	Brand	NUBEQA
Launch Month	May 2020	Form	Tablet	Strength	300 mg
Therapeutic Classes[*2] (2nd level)	Cytostatic Hormone Therapy	Mechanism of Action (MOA)	Antiandrogenic effect / Inhibitory effect on androgen receptor signal transduction		
Therapeutic Classes[*2] (3rd level)	Cytostatic Hormone Antagonists				
Indication	Non-metastatic castration-resistant prostate cancer				
Manufecturer	Bayer Yakuhin	Marketer	Bayer Yakuhin	Originator/s	Orion
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥2,311	Peak Sales (Predicted[*3])	¥18.2 Billion
Total Sales of the Therapeutic Category[*4]					¥165.6 Billion
Contribution of the Brands in the Category[*4]					77%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					63%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Prostate Cancer (PC): It occurs in the prostate, and is one of the most common types of cancer in males. Age is considered as the most prominent risk factor and the chances of developing PC rises rapidly after the age 50. Male hormone androgens (testosterone in particular), produced primarily in testes and also in adrenal gland, play a role in fueling the PC. Androgen deprivation therapy (ADT) is commonly used to suppress or block the production or action of androgens. However, when the non-metastatic castration-resistant prostate cancer (nmCRPC) develops, the PC no longer responds to medical or surgical treatments to lower the testosterone.

PC in Japan: The incidence of PC has been growing over the past decades in Japan. National Cancer Centre Japan has estimated that the number of PC patients in Japan was 95,400 in 2021. It represents over 20% rise since 2015 and nearly five times increase since 2000.

Market Landscape: Hormonal antagonist drugs are used to treat nmCRPC and advance form of PC (metastatic castration-resistant prostate cancer (mCRPC) and metastatic castration-sensitive prostate cancer (mCSPC)}. Zytiga and Xtandi are the leaders and they together generated over 60% of the total hormone-antagonist sales (¥165.5 Billion, 4% YoY in 03/2021). Both Zytiga and Xtandi are used in various treatment settings of prostate cancer and have also maintained their growth at ¥55.9 Billion (11% YoY) and ¥45.7 Billion (14% YoY) in FY 03/2021.

Zytiga is required to be used with a steroid (prednisolone) and mainly used in advanced forms of PC. While Xtandi is preferred in nmCRPC. It is considered to score over Zytiga due to its better safety profile, ease of use, and lack of food restrictions. Xtandi has also extended its indication base covering 'metastatic PC', in May 2020. Erleada, launched in May 2019, also belongs to the same class and generated ¥5.3 Billion on FY 03/2021. It was initially approved for nmCRPC and subsequently received label extension for 'metastatic PC'.

Position of Nubeqa: Xtandi was the first oral androgen receptor antagonist, followed by Zytiga and Erleada. Nubeqa is the latest in the group. It competitively inhibits androgens from binding to their receptors, inhibiting androgen receptor (AR) nuclear translocation, as well as AR-mediated transcription. Although it is currently approved for nmCRPC, a number trials ongoing for its use in mCRPC.

Clinical Data: Approval was based in PhIII ARAMIS study, which was the largest PhIII study carried out on nmCRPC patients involving about 1,500 patients. Nubeqa+ADT delivered a median metastasis-free survival (MFS) of 40.4 months, showing a significant extension over 18.4 months vs. placebo+ADT. Its safety profile was also found favourable.

Global Status: Nubeqa is already approved in the US and Europe, among other markets.

Ozempic and Rybelsus – Rybelsus is the first Oral GLP-1 agent with encouraging data

Drug Profile - Ozempic, Rybelsus					
Molecule Type	Biologics (not mAb)	Molecule	Semaglutide (Genetical recombination)	Brand	Ozempic
					Rybelsus
Launch Month	June 2020	Form	Injection	Strength	0.25 mg, 0.5 mg, 1 mg
	February 2021		Tablet		3 mg, 7 mg, 14 mg
Therapeutic Classes*2 (2nd level)	Drugs Used in Diabetes	Mechanism of Action (MOA)	GLP-1 receptor agonist		
Therapeutic Classes*2 (3rd level)	GLP-1 Agonist Antidiabetics				
Indication	Type 2 diabetes mellitus				
Manufacturer	Novo Nordisk Pharma	Marketer	Novo Nordisk Pharma	Originator/s	Novo Nordisk
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥1,547, ¥3,094, ¥6,188	Peak Sales (Predicted*3)	¥12.5 Billion
			¥143.2, ¥334.2, ¥501.3		¥11.6 Billion
Total Sales of the Therapeutic Category*4					¥56.9 Billion
Contribution of the Brands in the Category*4					100%
Hospital (≥100 beds) Sales Ratio in the Category*4					38%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

The year of 2020 was a very important year for diabetes when the first oral glucagon-like peptide-1 (GLP-1) agent (Rybelsus) and its once-weakly subcutaneous injection (SC) (Ozempic) were launched. Additionally, two brands of ultra-fast acting insulin (Fiasp and Lyumjev) and a combination of insulin with GLP-1 (Soliqua) was also launched.

The GLP-1 pathway: It is responsible for increasing insulin release and inhibiting glucagon secretion. GLP-1 analogues are known for strong efficacy with a lower risk of hypoglycemia, and also recognized for the additional benefit of weight loss. One of the major disadvantages of GLP-1, until the launch of Rybelsus, was that they were available as injection only.

Market Landscape: Total market for GLP-1 agents was ¥56.9 Billion (20% YoY and 24% 3-year compound annual growth rate (CAGR)). Although, this translates into just 9.4% of the total anti-diabetic drugs in 03/2021 of ¥608 Billion, they are one of the biggest growth drivers for the class.

Currently, about 95% of the total GLP-1 analogue market is capture by injectable Trulicity and Victoza and both are growing remarkably (13% and 27% YoY and 29% and 20% 3-year CAGR respectively). Trulicity offers a once-weekly dosing advantage versus once-daily dosing of Victoza. Byetta (¥0.4 Billion, -23% YoY) and Bydureon (¥0.3 Billion, -23% YoY) both are exenatide with different dosing schedule. Byetta has twice-daily dosing schedule and Bydureon (extended-release exenatide) once-weekly. While Trulicity and Bydureon both offer once-weekly advantage, Trulicity Ateos is considered to offer ease of administration. Bydureon comes either as a pre-filled pen or as a single-dose tray with a vial, syringe, needle, and connector that are to be assembled. Lyxumia is once-daily injectable Lixisenatide and is degrowing (¥0.5 Billion, -28% YoY).

Position of Rybelsus: It has demonstrated solid data in PIONEER global trial where it showed stronger glucose lowering effect than the dipeptidyl peptidase 4 (DPP-4) inhibitor (sitagliptin) or the sodium-glucose transport protein 2 (SGLT2) inhibitor (empagliflozin). Also, impressive weight loss effect was observed. It has potential to replace injectable GLP-1s & may also compete with DPP-4 inhibitors. However, its potential off-label use for weight-loss is considered as a concern.

Rybelsus uses a proprietary Eligen® SNAC technology which uses an absorption-enhancing excipient which helps large peptides and proteins to move across biological membranes in the gastrointestinal tract. Novo Nordisk acquired the Emisphere Technologies (which owned Eligen SNAC) and its future royalties at a total acquisition price of $1.8 billion in November, 2020.

Ozempic : Once-weekly injectable semaglutide (Ozempic) was also launched in June 2020 and posted ¥1.3 Billion in FY 03/2021. Although, it was approved in March 2018, its NHI listing was delayed due to its 2 mg approved dose (subcutaneous pen form) was found inappropriate for the Japan's 14-day prescription restriction rule.

Global Status: The US Food and Drug Administration (FDA) had approved Rybelsus in September 2019. By 2020, it was launched in 9 countries worldwide and had generated a sale of Danish Krone (DKK) 1,873 million[*5]. In June 2021, the US FDA also approved high-dose of semaglutide injection (2.4 mg once weekly) for chronic weight management. This was marked as the first approval for chronic weight management since 2014, and further strengthens semaglutide safety and efficacy in lowering weight.

[*5]…One DKK is equivalent to 18.0 JPY (as of June 1, 2021)

Zejula – the 2nd PARP inhibitor for Ovarian Cancer in Japan

Drug Profile - Zejula					
Molecule Type	Small Molecule	Molecule	Niraparib tosilate hydrate	Brand	Zejula
Launch Month	November 2020	Form	Capsule	Strength	100 mg
Therapeutic Classes*2 (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on PARP (poly (ADP-ribose) polymerase)		
Therapeutic Classes*2 (3rd level)	All Other Antineoplastics				
Indication	For the maintenance treatment of patients with ovarian cancer following completion of first-line chemotherapy / for the maintenance treatment of patients with platinum-based antineoplastic agent-sensitive relapsed ovarian cancer / for the treatment of patients with platinum-based antineoplastic agent-sensitive relapsed ovarian cancer with homologous recombination repair deficiency				
Manufecturer	Takeda Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Merck & Co.
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥10,370.2	Peak Sales (Predicted*3)	¥19.6 Billion
Total Sales of the Therapeutic Category*4					¥131.1 Billion
Contribution of the Brands in the Category*4					100%
Hospital (≥100 beds) Sales Ratio in the Category*4					92%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Takeda rolled out its poly (ADP-ribose) polymerases (PARP) inhibitor Zejula (niraparib) in November 2020 for the treatment of ovarian cancer (OC) in certain settings. It is the second product to be available in the class after AstraZeneca's Lynparza (olaparib).

Zejula was approved in September 2020 for three OC indications: 1) maintenance therapy after initial chemotherapy for OC, 2) maintenance therapy in platinum-sensitive recurrent OC, and 3) recurrent OC with homologous recombination repair deficiency sensitive to platinum-based agents.

It was listed on November 18th and was launched shortly after on November 20th. However, since its approval in September till its launch, Takeda offered the medicine for free under its compassionate use program for patients with platinum-sensitive recurrent OC with homologous recombination repair deficiency. Soon after its launch, Takeda also filed an application seeking its approval for an additional tablet formulation (originally launched as capsules).

The filing in Japan (in December 2019) was backed on four clinical studies - the PIII NOVA study in the US and Europe, the PII QUADRA study in the US, and two PhII Japanese studies (Niraparib-2001 & Niraparib-2002). Takeda licensed-in Zejula from the US biotech Tesaro (now a part of GSK) in July 2017.

MOA: PARP is a protein which plays role in repairing damaged DNA in both healthy and cancerous cells. PARP-inhibitors work to stop PARP from repairing cancer cells, and by doing so, they may lead to cancer cell death, and slow the return or progression of cancer. PARP inhibitors are taken orally and offer flexibility to take them at home.

Market Landscape: Zejula is the second PARP-inhibitor after Lynparza, which was launched in April, 2018. Zejula was priced by the comparator method (I) with Lynparza. Lynparza posted a sales of ¥22.0 Billion (21% YoY) in FY 03/2021. Zejula is expected to attain its peak sales of ¥19.6 Billion in the 10th year, treating 2,600 patients, as per the documents submitted at Central Social Insurance Medical Council (Chukyo). As per National Cancer Centre data, there were 13,049 cases of ovarian cancer reported in Japan in 2018 (it was ~45% increase in past 10 years).

Global Status: Zejula was approved in the US in March 2017 for the maintenance therapy of adult patients with recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer, who are in a complete or partial response to platinum-based chemotherapy.

Dovato

Drug Profile - Dovato					
Molecule Type	Small Molecule (Combination)	Molecule	Dolutegravir sodium + Lamivudine	Brand	Dovato
Launch Month	January 2020	Form	Tablet	Strength	50 mg (Dolutegravir sodium) & 300 mg (Lamivudine)
Therapeutic Classes[*2] (2nd level)	Antivirals for Systemic Use	Mechanism of Action (MOA)	Inhibitory effect on HIV integrase / Inhibitory effect on nucleoside HIV reverse transcriptase		
Therapeutic Classes[*2] (3rd level)	HIV Antivirals				
Indication	HIV infection (Orphan drug designation)				
Manufacturer	ViiV Healthcare	Marketer	GlaxoSmithKline	Originator/s	GlaxoSmithKline
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥4,814.7	Peak Sales (Predicted[*3])	¥2.3 Billion
Total Sales of the Therapeutic Category[*4]					¥69.2 Billion
Contribution of the Brands in the Category[*4]					97%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					86%

Pifeltro

Drug Profile - Pifeltro					
Molecule Type	Small Molecule	Molecule	Doravirine	Brand	PIFELTRO
Launch Month	February 2020	Form	Tablet	Strength	100 mg
Therapeutic Classes[*2] (2nd level)	Antivirals for Systemic Use	Mechanism of Action (MOA)	Inhibitory effect on non-nucleoside HIV reverse transcriptase		
Therapeutic Classes[*2] (3rd level)	HIV Antivirals				
Indication	HIV-1 infection (Orphan drug designation)				
Manufacturer	MSD	Marketer	MSD	Originator/s	Merck & Co.
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥2,147.8	Peak Sales (Predicted[*3])	¥870 Million
Total Sales of the Therapeutic Category[*4]					¥69.2 Billion
Contribution of the Brands in the Category[*4]					97%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					86%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Fycompa

Drug Profile - Fycompa					
Molecule Type	Small Molecule	Molecule	Perampanel hydrate	Brand	Fycompa
Launch Month	July 2020	Form	Fine Granule	Strength	10 mg
Therapeutic Classes[*2] (2nd level)	Anti-epileptics	Mechanism of Action (MOA)	AMPA-type glutamate receptor antagonism		
Therapeutic Classes[*2] (3rd level)	Anti-epileptics				
Indication	For the treatment of partial-onset seizures with or without secondarily generalised seizures in patients with epilepsy / for the combination treatment of tonic-clonic seizures in patients with epilepsy who had an inadequate response to other antiepilepsy agents				
Manufecturer	Eisai	Marketer	Eisai	Originator/s	Eisai
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥1,068.9	Peak Sales (Predicted[*3])	¥2.4 Billion
Total Sales of the Therapeutic Category[*4]					¥202.6 Billion
Contribution of the Brands in the Category[*4]					47%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					42%

Urece

Drug Profile - Urece					
Molecule Type	Small Molecule	Molecule	Dotinurad	Brand	URECE
Launch Month	May 2020	Form	Tablet	Strength	0.5 mg, 1 mg, 2 mg
Therapeutic Classes[*2] (2nd level)	Anti-gout Preparations	Mechanism of Action (MOA)	Uricosuric effect		
Therapeutic Classes[*2] (3rd level)	Anti-gout Preparations				
Indication	Gout, hyperuricemia				
Manufecturer	FUJI YAKUHIN	Marketer	MOCHIDA PHARMACEUTICAL	Originator/s	FUJI YAKUHIN
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥30, ¥54.8, ¥100.3	Peak Sales (Predicted[*3])	¥4.1 Billion
Total Sales of the Therapeutic Category[*4]					¥57.3 Billion
Contribution of the Brands in the Category[*4]					90%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					22%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Thyradin

Drug Profile - Thyradin					
Molecule Type	Small Molecule	Molecule	Levothyroxine sodium hydrate	Brand	THYRADIN
Launch Month	June 2020	Form	Injection	Strength	200 μg
Therapeutic Classes[*2] (2nd level)	Thyroid Therapy	Mechanism of Action (MOA)	Thyroid hormone replacement effect		
Therapeutic Classes[*2] (3rd level)	Thyroid Preparations				
Indication	Myxedema coma/hypothyroidism (for hypothyroidism, only in patients ineligible for oral levothyroxine sodium therapy)				
Manufacturer	ASKA Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Laboratoires SERB
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥20,211	Peak Sales (Predicted[*3])	¥180 Million
Total Sales of the Therapeutic Category[*4]					¥8.4 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					28%

Corectim

Drug Profile - Corectim					
Molecule Type	Small Molecule	Molecule	Delgocitinib	Brand	CORECTIM
Launch Month	May 2020	Form	Ointment	Strength	5 mg
Therapeutic Classes[*2] (2nd level)	Nonsteroidal Products for Inflammatory Skin Disorders	Mechanism of Action (MOA)	Inhibitory effect on Janus kinases (JAK)		
Therapeutic Classes[*2] (3rd level)	Other Nonsteroidal Products for Inflammatory Skin Disorders				
Indication	Atopic dermatitis				
Manufacturer	JAPAN TOBACCO	Marketer	TORII PHARMACEUTICAL	Originator/s	JAPAN TOBACCO
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥139.7	Peak Sales (Predicted[*3])	¥5 Billion
Total Sales of the Therapeutic Category[*4]					¥7 Billion
Contribution of the Brands in the Category[*4]					60%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					11%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Latuda

Drug Profile - Latuda					
Molecule Type	Small Molecule	Molecule	Lurasidone hydrochloride	Brand	Latuda
Launch Month	June 2020	Form	Tablet	Strength	20 mg, 40 mg, 60 mg, 80 mg
Therapeutic Classes[*2] (2nd level)	Psycholeptics	Mechanism of Action (MOA)	Antidopaminergic effect / Antiserotonin effect		
Therapeutic Classes[*2] (3rd level)	Antipsychotics				
Indication	For improvement of depressive symptoms in schizophrenia / bipolar disorder				
Manufecturer	Sumitomo Dainippon Pharma	Marketer	Sumitomo Dainippon Pharma	Originator/s	Sumitomo Dainippon Pharma
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥178.7, ¥328.9, ¥469.9, ¥493.4	Peak Sales (Predicted[*3])	¥6.1 Billion
Total Sales of the Therapeutic Category[*4]					¥131.7 Billion
Contribution of the Brands in the Category[*4]					59%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					60%

Melatobel

Drug Profile - Melatobel					
Molecule Type	Small Molecule	Molecule	Melatonin	Brand	Melatobel
Launch Month	June 2020	Form	Granule	Strength	2 mg
Therapeutic Classes[*2] (2nd level)	Other Hormones	Mechanism of Action (MOA)	Stimulatory effect on melatonin receptors		
Therapeutic Classes[*2] (3rd level)	Other Hormones & Preparations with Similar Actions				
Indication	For the improvement of difficulty falling asleep associated with pediatric neurodevelopmental disorder				
Manufecturer	Nobelpharma	Marketer	Nobelpharma	Originator/s	Unknown
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥207.8	Peak Sales (Predicted[*3])	¥1.1 Billion
Total Sales of the Therapeutic Category[*4]					-
Contribution of the Brands in the Category[*4]					-
Hospital (≥100 beds) Sales Ratio in the Category[*4]					-

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Tepmetko

Drug Profile - Tepmetko					
Molecule Type	Small Molecule	Molecule	Tepotinib hydrochloride hydrate	Brand	TEPMETKO
Launch Month	June 2020	Form	Tablet	Strength	250 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on mesenchymal-epithelial transition factors (MET)		
Therapeutic Classes[*2] (3rd level)	Protein Kinase Inhibitor Antineoplastics				
Indication	Unresectable advanced or recurrent MET exon 14 skipping mutation-positive non-small cell lung cancer (Orphan drug designation)				
Manufecturer	Merck Biopharma	Marketer	Merck Biopharma	Originator/s	Merck KGaA
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥14,399	Peak Sales (Predicted[*3])	¥2.5 Billion
Total Sales of the Therapeutic Category[*4]					¥442.7 Billion
Contribution of the Brands in the Category[*4]					94%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					74%

Velexbru

Drug Profile - Velexbru					
Molecule Type	Small Molecule	Molecule	Tirabrutinib hydrochloride	Brand	VELEXBRU
Launch Month	May 2020	Form	Tablet	Strength	80 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on Bruton's tyrosine kinase		
Therapeutic Classes[*2] (3rd level)	Protein Kinase Inhibitor Antineoplastics				
Indication	Relapsed or refractory primary central nervous system lymphoma (Orphan drug designation)				
Manufecturer	ONO PHARMACEUTICAL	Marketer	ONO PHARMACEUTICAL	Originator/s	ONO PHARMACEUTICAL
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥5,067.4	Peak Sales (Predicted[*3])	¥1.1 Billion
Total Sales of the Therapeutic Category[*4]					¥442.7 Billion
Contribution of the Brands in the Category[*4]					94%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					74%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Anerem

Drug Profile - Anerem					
Molecule Type	Small Molecule	Molecule	Remimazolam besilate	Brand	ANEREM
Launch Month	August 2020	Form	Injection	Strength	50 mg
Therapeutic Classes*2 (2nd level)	Anaesthetics	Mechanism of Action (MOA)	GABAA receptor antagonism		
Therapeutic Classes*2 (3rd level)	Anaesthetics, General				
Indication	For the induction and maintenance of general anesthesia				
Manufecturer	Mundipharma	Marketer	Mundipharma	Originator/s	GlaxoSmithKline
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥2,218	Peak Sales (Predicted*3)	¥1.3 Billion
Total Sales of the Therapeutic Category*4					¥23.8 Billion
Contribution of the Brands in the Category*4					31%
Hospital (≥100 beds) Sales Ratio in the Category*4					89%

Viltepso

Drug Profile - Viltepso					
Molecule Type	Nucleic acid	Molecule	Viltolarsen	Brand	Viltepso
Launch Month	May 2020	Form	Injection	Strength	250 mg
Therapeutic Classes*2 (2nd level)	Other Drugs for Disorders of the Musculo-Skeletal System	Mechanism of Action (MOA)	Exon skipping effect		
Therapeutic Classes*2 (3rd level)	All Other Musculoskeletal Products				
Indication	Duchenne muscular dystrophy with a confirmed deficiency of the dystrophin gene amenable to exon 53 skipping therapy (Orphan drug designation)				
Manufecturer	Nippon Shinyaku	Marketer	Nippon Shinyaku	Originator/s	National Center of Neurology and Psychiatry, Nippon Shinyaku
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥91,136	Peak Sales (Predicted*3)	¥5.4 Billion
Total Sales of the Therapeutic Category*4					¥73 Billion
Contribution of the Brands in the Category*4					57%
Hospital (≥100 beds) Sales Ratio in the Category*4					59%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Lyumjev

Drug Profile - Lyumjev					
Molecule Type	Biologics (not mAb)	Molecule	Insulin lispro (Genetical recombination)	Brand	LYUMJEV
Launch Month	June 2020	Form	Injection	Strength	300 U (MirioPen), 300 U (MirioPen HD), 300 U (Cart), 100 U
Therapeutic Classes*2 (2nd level)	Drugs Used in Diabetes	Mechanism of Action (MOA)	Insulin replacement effect, insulin receptor agonism / Hypoglycemic effect		
Therapeutic Classes*2 (3rd level)	Human Insulins & Analogues				
Indication	For the treatment of patients with diabetes mellitus for which an insulin therapy is indicated				
Manufecturer	Eli Lilly Japan	Marketer	Eli Lilly Japan	Originator/s	Eli Lilly and Company
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥1,400, ¥1,400, ¥1,175, ¥277	Peak Sales (Predicted*3)	¥2.8 Billion
Total Sales of the Therapeutic Category*4					¥73.3 Billion
Contribution of the Brands in the Category*4					78%
Hospital (≥100 beds) Sales Ratio in the Category*4					40%

Soliqua

Drug Profile - Soliqua					
Molecule Type	Biologics (not mAb) (Combination)	Molecule	Insulin glargine (Genetical recombination) + Lixisenatide	Brand	SOLIQUA
Launch Month	June 2020	Form	Injection	Strength	300 U (Insulin glargine (Genetical recombination)) & 300 mg (Lixisenatide)
Therapeutic Classes*2 (2nd level)	Drugs Used in Diabetes	Mechanism of Action (MOA)	Insulin replacement effect / GLP-1 receptor agonist		
Therapeutic Classes*2 (3rd level)	Human Insulins & Analogues				
Indication	For the treatment of patients with diabetes mellitus for which an insulin therapy is indicated				
Manufecturer	Sanofi	Marketer	Sanofi	Originator/s	Sanofi, Zealand Pharma
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥6,497	Peak Sales (Predicted*3)	¥3.2 Billion
Total Sales of the Therapeutic Category*4					¥73.3 Billion
Contribution of the Brands in the Category*4					78%
Hospital (≥100 beds) Sales Ratio in the Category*4					40%

*2...Encise's classification
*3...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
*4...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Onivyde

Drug Profile - Onivyde					
Molecule Type	Small Molecule	Molecule	Irinotecan hydrochloride hydrate	Brand	Onivyde
Launch Month	June 2020	Form	Injection	Strength	43 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on type I DNA topoisomerase		
Therapeutic Classes[*2] (3rd level)	Plant-Based Antineoplastics				
Indication	Unresectable pancreatic cancer that has progressed after cancer chemotherapy (Orphan drug designation)				
Manufacturer	Nihon Servier	Marketer	Nihon Servier	Originator/s	HERMES Biosciences
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥128,131	Peak Sales (Predicted[*3])	¥4.7 Billion
Total Sales of the Therapeutic Category[*4]					¥74.6 Billion
Contribution of the Brands in the Category[*4]					76%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					97%

Steboronine

Drug Profile - Steboronine					
Molecule Type	Small Molecule	Molecule	Borofalan (^{10}B)	Brand	STEBORONINE
Launch Month	May 2020	Form	Injection	Strength	9,000 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Generation effect of α-ray and lithium atomic nucleus by neutron irradiation		
Therapeutic Classes[*2] (3rd level)	All Other Antineoplastics				
Indication	Locally unresectable recurrent or unresectable advanced head and neck cancer				
Manufacturer	STELLA PHARMA	Marketer	STELLA PHARMA	Originator/s	STELLA PHARMA
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥444,215	Peak Sales (Predicted[*3])	¥2.9 Billion
Total Sales of the Therapeutic Category[*4]					¥131.1 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					92%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Vonvendi

Drug Profile - Vonvendi					
Molecule Type	Biologics (not mAb)	Molecule	Vonicog alfa (Genetical recombination)	Brand	VONVENDI
Launch Month	August 2020	Form	Injection	Strength	1,300 IU
Therapeutic Classes[*2] (2nd level)	Blood Coagulation System, Other Products	Mechanism of Action (MOA)	Hemostatic action and supplementation of von Willebrand factor		
Therapeutic Classes[*2] (3rd level)	Blood Coagulation				
Indication	For the control of bleeding tendency in patients with von Willebrand disease (Orphan drug designation)				
Manufecturer	Takeda Pharmaceutical, Shire Japan	Marketer	Takeda Pharmaceutical, Shire Japan	Originator/s	Max Delbrück Center for Molecular Medicine
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥146,288	Peak Sales (Predicted[*3])	¥980 Million
Total Sales of the Therapeutic Category[*4]					¥125.3 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					80%

Ailamide

Drug Profile - Ailamide					
Molecule Type	Small Molecule (Combination)	Molecule	Brinzolamide + Brimonidine tartrate	Brand	AILAMIDE
Launch Month	June 2020	Form	Liquid	Strength	10 mg (Brinzolamide) & 1 mg (Brimonidine tartrate)
Therapeutic Classes[*2] (2nd level)	Ophthalmologicals	Mechanism of Action (MOA)	α2-Adrenergic receptor agonist / Inhibitory effect on carbonic anhydrase		
Therapeutic Classes[*2] (3rd level)	Miotics & Antiglaucoma Preparations				
Indication	For the treatment of glaucoma and ocular hypertension in patients who have not responded sufficiently to other antiglaucoma drugs				
Manufecturer	Senju Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Senju Pharmaceutical
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥492.2	Peak Sales (Predicted[*3])	¥3.7 Billion
Total Sales of the Therapeutic Category[*4]					¥104.8 Billion
Contribution of the Brands in the Category[*4]					54%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					18%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Zolgensma

Drug Profile - Zolgensma					
Molecule Type	Regenerative medical product	Molecule	Onasemnogene abeparvovec	Brand	zolgensma
Launch Month	May 2020	Form	Injection	Strength	-
Therapeutic Classes[*2] (2nd level)	Other Drugs for Disorders of the Musculo-Skeletal System	Mechanism of Action (MOA)	SMN gene replacement effect		
Therapeutic Classes[*2] (3rd level)	All Other Musculoskeletal Products				
Indication	For the treatment of patients with spinal muscular atrophy (including those with genetically diagnosed pre-symptomatic SMA), who had tested negative for anti-AAV9 antibodies (Designated as an orphan regenerative medicine product)				
Manufecturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	Nationwide Children's Hospital
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥167,077,222	Peak Sales (Predicted[*3])	¥4.2 Billion
Total Sales of the Therapeutic Category[*4]					¥73 Billion
Contribution of the Brands in the Category[*4]					57%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					59%

Ongentys

Drug Profile - Ongentys					
Molecule Type	Small Molecule	Molecule	Opicapone	Brand	ONGENTYS
Launch Month	August 2020	Form	Tablet	Strength	25 mg
Therapeutic Classes[*2] (2nd level)	Anti-parkinson Drugs	Mechanism of Action (MOA)	Inhibitory effect on catechol-O-methyltransferase (COMT)		
Therapeutic Classes[*2] (3rd level)	Anti-parkinson Drugs				
Indication	For the improvement of wearing off phenomenon in patients with Parkinson's disease who are treates with levodopa/carbidopa or levodopa/benserazide hydrochloride				
Manufecturer	ONO PHARMACEUTICAL	Marketer	ONO PHARMACEUTICAL	Originator/s	BIAL
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥972	Peak Sales (Predicted[*3])	¥4.4 Billion
Total Sales of the Therapeutic Category[*4]					¥98.6 Billion
Contribution of the Brands in the Category[*4]					71%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					45%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Mayzent

Drug Profile - Mayzent					
Molecule Type	Small Molecule	Molecule	Siponimod fumaric acid	Brand	MAYZENT
Launch Month	September 2020	Form	Tablet	Strength	0.25 mg, 2 mg
Therapeutic Classes[*2] (2nd level)	Other CNS Drugs	Mechanism of Action (MOA)	Functional antagonist of sphingosine-1-phosphate receptors		
Therapeutic Classes[*2] (3rd level)	Multiple Sclerosis Products				
Indication	Prevention of recurrence of secondary progressive multiple sclerosis and suppression of progression of physical disability (Orphan drug designation)				
Manufacturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	Novartis International
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥1,083.5, ¥8,668	Peak Sales (Predicted[*3])	¥4.7 Billion
Total Sales of the Therapeutic Category[*4]					¥27.3 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					64%

Tabrecta

Drug Profile - Tabrecta					
Molecule Type	Small Molecule	Molecule	Capmatinib hydrochloride hydrate	Brand	TABRECTA
Launch Month	August 2020	Form	Tablet	Strength	150 mg, 200 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Inhibitory effect on mesenchymal-epithelial transition (MET)		
Therapeutic Classes[*2] (3rd level)	Protein Kinase Inhibitor Antineoplastics				
Indication	Unresectable advanced or recurrent MET exon 14 skipping mutation-positive non-small cell lung cancer (Orphan drug designation)				
Manufacturer	Novartis Pharma	Marketer	Novartis Pharma	Originator/s	Incyte Corporation
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥5,055.5, ¥6,573.5	Peak Sales (Predicted[*3])	¥2.7 Billion
Total Sales of the Therapeutic Category[*4]					¥442.7 Billion
Contribution of the Brands in the Category[*4]					94%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					74%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Ferinject

Drug Profile - Ferinject					
Molecule Type	Small Molecule	Molecule	Ferric carboxymaltose	Brand	Ferinject
Launch Month	September 2020	Form	Injection	Strength	500 mg
Therapeutic Classes[*2] (2nd level)	Anti-anaemic Preparations	Mechanism of Action (MOA)	Iron supplementation		
Therapeutic Classes[*2] (3rd level)	Haematinics, Iron & All Combinations				
Indication	Iron-deficiency anemia				
Manufacturer	Zeria Pharmaceutical	Marketer	Zeria Pharmaceutical	Originator/s	Vifor Pharma
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥6,078	Peak Sales (Predicted[*3])	¥1.8 Billion
Total Sales of the Therapeutic Category[*4]					¥4.6 Billion
Contribution of the Brands in the Category[*4]					35%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					35%

Ilumya

Drug Profile - Ilumya					
Molecule Type	Biologics (mAb)	Molecule	Tildrakizumab (Genetical recombination)	Brand	ILUMYA
Launch Month	September 2020	Form	Injection	Strength	100 mg
Therapeutic Classes[*2] (2nd level)	Nonsteroidal Products for Inflammatory Skin Disorders	Mechanism of Action (MOA)	Inhibitory effect on IL-23p19		
Therapeutic Classes[*2] (3rd level)	Systemic Antipsoriasis Products				
Indication	Psoriasis vulgaris inadequate with existing treatments				
Manufacturer	Sun Pharma	Marketer	Sun Pharma	Originator/s	Schering-Plough
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥487,413	Peak Sales (Predicted[*3])	¥3.8 Billion
Total Sales of the Therapeutic Category[*4]					¥17.5 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					85%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Sarclisa

Drug Profile - Sarclisa					
Molecule Type	Biologics (mAb)	Molecule	Isatuximab (Genetical recombination)	Brand	SARCLISA
Launch Month	August 2020	Form	Injection	Strength	100 mg, 500 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Antibody dependent cellular cytotoxicity effect (Anti-CD38 monoclonal antibody)		
Therapeutic Classes[*2] (3rd level)	Monoclonal Antibody Antineoplastics				
Indication	Relapsed or refractory multiple myeloma				
Manufecturer	Sanofi	Marketer	Sanofi	Originator/s	ImmunoGen
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥64,699, ¥285,944	Peak Sales (Predicted[*3])	¥4.5 Billion
Total Sales of the Therapeutic Category[*4]					¥711.1 Billion
Contribution of the Brands in the Category[*4]					78%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					97%

Enspryng

Drug Profile - Enspryng					
Molecule Type	Biologics (mAb)	Molecule	Satralizumab (Genetical recombination)	Brand	ENSPRYNG
Launch Month	August 2020	Form	Injection	Strength	120 mg
Therapeutic Classes[*2] (2nd level)	Other CNS Drugs	Mechanism of Action (MOA)	Inhibitory effect on IL-6 signal transduction		
Therapeutic Classes[*2] (3rd level)	All Other CNS Drugs				
Indication	Prevention of recurrence of neuromyelitis optica spectrum disorder (including neuromyelitis optica) (Orphan drug designation)				
Manufecturer	CHUGAI PHARMACEUTICAL	Marketer	CHUGAI PHARMACEUTICAL	Originator/s	CHUGAI PHARMACEUTICAL
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥1,532,660	Peak Sales (Predicted[*3])	¥5.4 Billion
Total Sales of the Therapeutic Category[*4]					¥138.1 Billion
Contribution of the Brands in the Category[*4]					73%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					56%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Baqsimi

Drug Profile - Baqsimi					
Molecule Type	Biologics (not mAb)	Molecule	Glucagon	Brand	Baqsimi
Launch Month	October 2020	Form	Inhalation	Strength	3 mg
Therapeutic Classes[*2] (2nd level)	Other Hormones	Mechanism of Action (MOA)	Glycogenolytic and gluconeogenic actions		
Therapeutic Classes[*2] (3rd level)	Glucagon				
Indication	First aid for hypoglycemia				
Manufacturer	Eli Lilly Japan	Marketer	Eli Lilly Japan	Originator/s	A.M.G. Medical
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥8,368.6	Peak Sales (Predicted[*3])	¥3.3 Billion
Total Sales of the Therapeutic Category[*4]					¥2.3 Billion
Contribution of the Brands in the Category[*4]					85%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					70%

Xeplion TRI

Drug Profile - Xeplion TRI					
Molecule Type	Small Molecule	Molecule	Paliperidone palmitate	Brand	XEPLION TRI
Launch Month	November 2020	Form	Injection	Strength	175 mg, 263 mg, 350 mg, 525 mg
Therapeutic Classes[*2] (2nd level)	Psycholeptics	Mechanism of Action (MOA)	Antidopaminergic effect / Antiserotonin effect		
Therapeutic Classes[*2] (3rd level)	Antipsychotics				
Indication	Only for the treatment of patients with schizophrenia who had an adequat treatment with paliperidone 4-week interval IM injection				
Manufacturer	Janssen Pharmaceutical	Marketer	Janssen Pharmaceutical	Originator/s	Johnson & Johnson
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥64,540, ¥84,829, ¥102,748, ¥134,858	Peak Sales (Predicted[*3])	¥7.6 Billion
Total Sales of the Therapeutic Category[*4]					¥131.7 Billion
Contribution of the Brands in the Category[*4]					59%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					60%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Xeomin

Drug Profile - Xeomin					
Molecule Type	Biologics (not mAb)	Molecule	Incobotulinumtoxin A	Brand	XEOMIN
Launch Month	December 2020	Form	Injection	Strength	50 U, 100 U, 200 U
Therapeutic Classes[*2] (2nd level)	Muscle Relaxants	Mechanism of Action (MOA)	Inhibitory effect on acetylcholine release		
Therapeutic Classes[*2] (3rd level)	Muscle Relaxants, Peripherally Acting				
Indication	Upper limb spasticity				
Manufacturer	TEIJIN PHARMA	Marketer	TEIJIN PHARMA	Originator/s	BioteCon Therapeutics
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥18,707, ¥34,646, ¥68,922	Peak Sales (Predicted[*3])	¥1.6 Billion
Total Sales of the Therapeutic Category[*4]					¥20.2 Billion
Contribution of the Brands in the Category[*4]					87%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					68%

Akalux

Drug Profile - Akalux					
Molecule Type	Antibody Drug Conjugate	Molecule	Cetuximab sarotalocan sodium (Genetical recombination)	Brand	Akalux
Launch Month	January 2021	Form	Injection	Strength	250 mg
Therapeutic Classes[*2] (2nd level)	Antineoplastics	Mechanism of Action (MOA)	Cell membrane damaging effect by photoreaction (selectively bind to EGFR)		
Therapeutic Classes[*2] (3rd level)	All Other Antineoplastics				
Indication	Locally unresectable recurrent or unresectable advanced head and neck cancer				
Manufacturer	Rakuten Medical Japan	Marketer	Rakuten Medical Japan	Originator/s	Aspyrian Therapeutics
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥1,026,825	Peak Sales (Predicted[*3])	¥3.8 Billion
Total Sales of the Therapeutic Category[*4]					¥131.1 Billion
Contribution of the Brands in the Category[*4]					100%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					92%

[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Buccolam

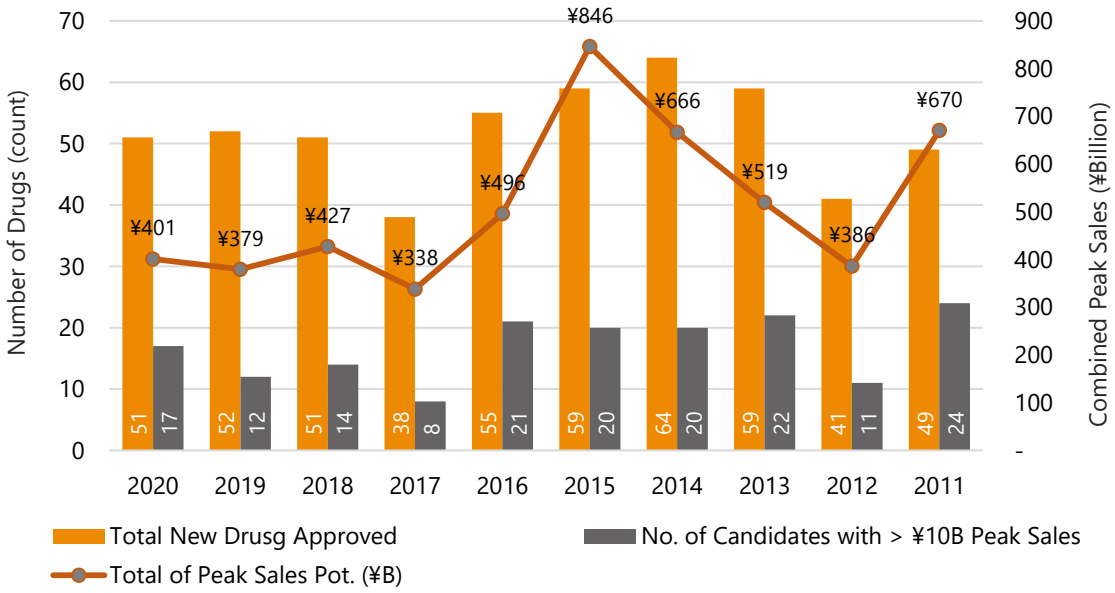
Drug Profile - Buccolam					
Molecule Type	Small Molecule	Molecule	Midazolam	Brand	BUCCOLAM
Launch Month	December 2020	Form	Liquid	Strength	2.5 mg, 5 mg, 7.5 mg, 10 mg
Therapeutic Classes[*2] (2nd level)	Anti-epileptics	Mechanism of Action (MOA)	Benzodiazepine receptor agonism		
Therapeutic Classes[*2] (3rd level)	Anti-epileptics				
Indication	Status epilepticus				
Manufecturer	Takeda Pharmaceutical	Marketer	Takeda Pharmaceutical	Originator/s	Therakind, ViroPharma
Price Maintenance Premium (PMP)	Applied	Unit Price (at the time of first listing)	¥1,125.8, ¥1,977.8, ¥2,750, ¥3,474.6	Peak Sales (Predicted[*3])	¥46 Million
Total Sales of the Therapeutic Category[*4]					¥202.6 Billion
Contribution of the Brands in the Category[*4]					47%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					42%

Ecclock

Drug Profile - Ecclock					
Molecule Type	Small Molecule	Molecule	Sofpironium bromide	Brand	ECCLOCK
Launch Month	November 2020	Form	Gelling Agent	Strength	50 mg
Therapeutic Classes[*2] (2nd level)	Other CNS Drugs	Mechanism of Action (MOA)	Acetylcholine receptor antagonism (Muscarine receptor antagonism)		
Therapeutic Classes[*2] (3rd level)	All Other CNS Drugs				
Indication	Primary axillary hyperhidrosis				
Manufecturer	KAKEN PHARMACEUTICAL	Marketer	KAKEN PHARMACEUTICAL	Originator/s	Bodor Laboratories
Price Maintenance Premium (PMP)	Not applied	Unit Price (at the time of first listing)	¥243.7	Peak Sales (Predicted[*3])	¥3.8 Billion
Total Sales of the Therapeutic Category[*4]					¥138.1 Billion
Contribution of the Brands in the Category[*4]					73%
Hospital (≥100 beds) Sales Ratio in the Category[*4]					56%

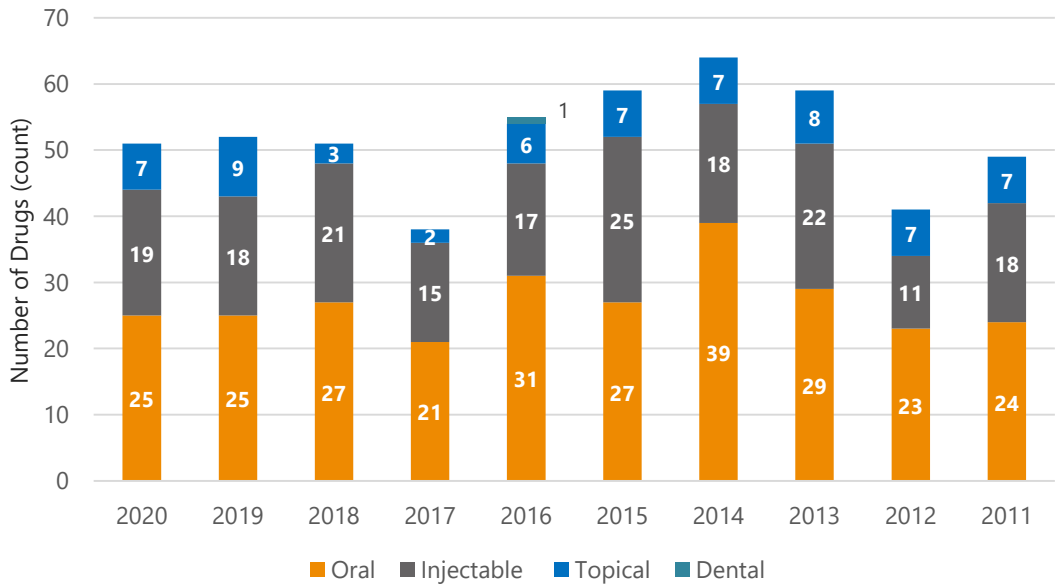
[*2]...Encise's classification
[*3]...as per documents submitted to the Central Social Insurance Medical Council (Chuikyo)
[*4]...therapeutic category sales based on the 3rd level of Encise's classification in year 03/2021.

Figure 7. New Drugs vs Peak Sales



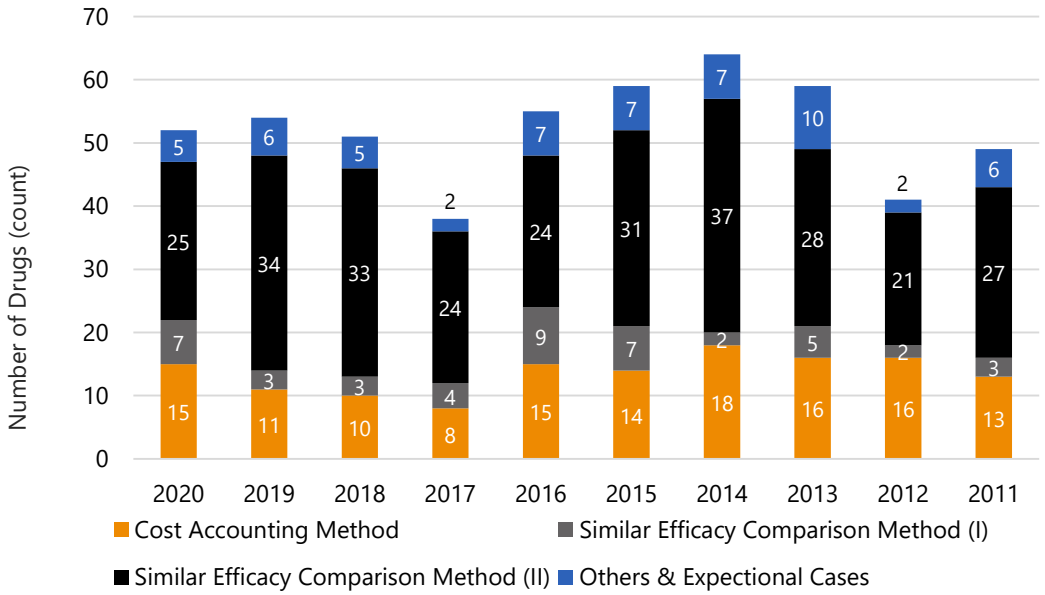
Source: MHLW, Encise Research Center

Figure 8. New Drugs Listing by Formulation Type



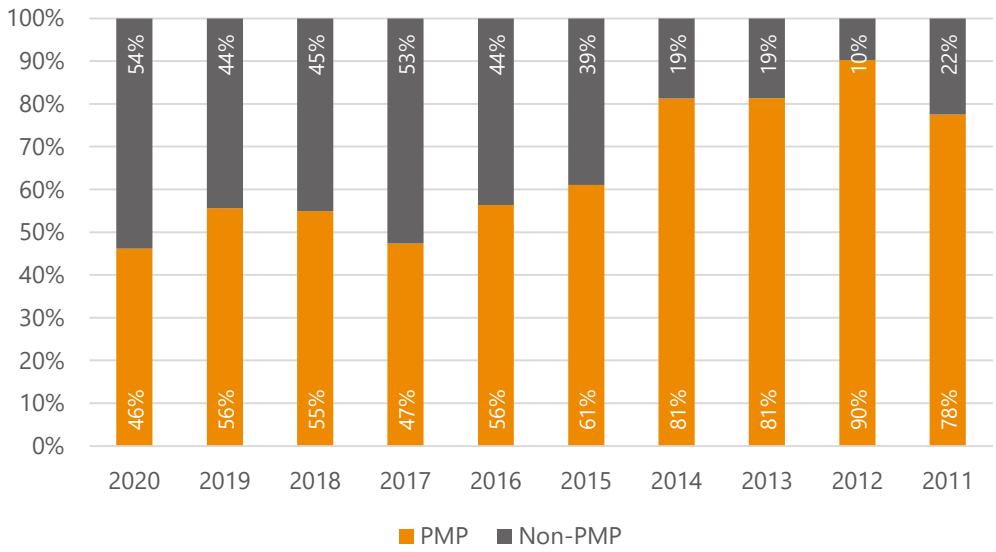
Source: MHLW, Encise Research Center

Figure 9. New Drugs Listing by Pricing Method



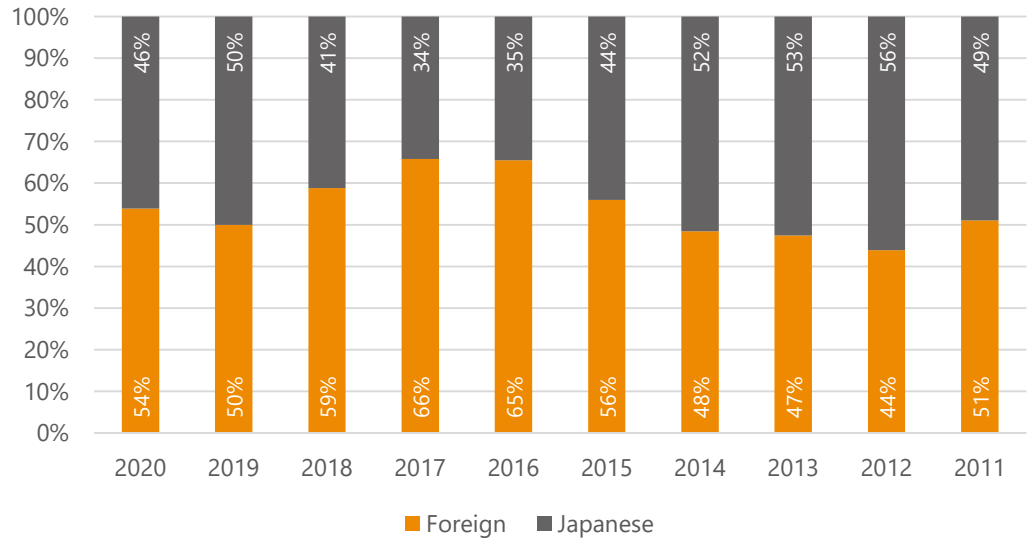
Source: MHLW, Encise Research Center

Figure 10. New Drugs Listing by PMP vs Non-PMP



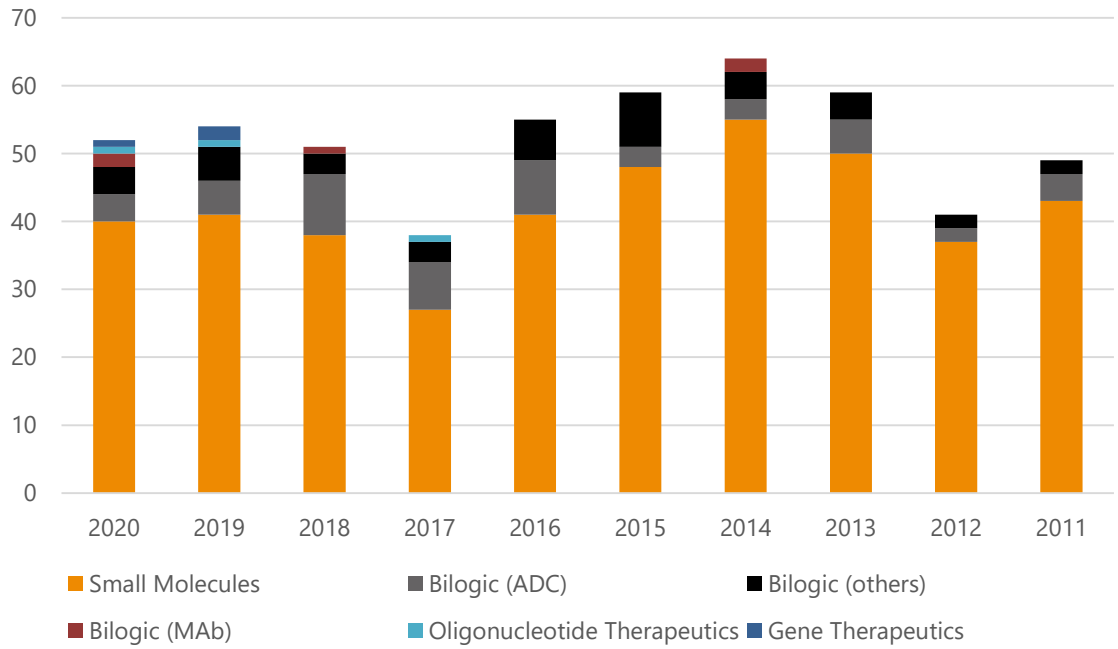
Source: MHLW, Encise Research Center

Figure 11. New Drugs Listing by Sponsor's Origin of Country



Source: MHLW, Encise Research Center

Figure 12. New Drugs Listing by Type of Molecule



Source: MHLW, Encise Research Center

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