Expectation for the future and the role of the JP

From Academia's perspectives

Toru KAWANISHI, PhD
Director-General
National Institute of Health Sciences

Today's topics

- Background:　Changes in the environment for drugs
- Expected role of Japanese Pharmacopoeia to deal with the changes

Changes in the Environments for Drugs both Domestic and International

- Issues for drugs
  - New drugs — Promotion of Healthcare Policy
  - Generic Drugs — Roadmap for Promotion
  - Biosimilars — Challenging to Promotion
  - OTC drugs — Driving to Self-medication
- Globalization of drugs
- Sophistication of Quality Control of drugs

New Drugs – Promotion of Healthcare Policy

- Background:
  - Ultra-aging society
  - Reconstruction of industrial infrastructure for 21st century in Japan
- Nation's policy for R&D promotion of medical products including pharmaceuticals
  - Japan Revitalization Strategy (June 2013)
  - Act on Promotion of Healthcare Policy (May 2014)
- Anticipation of development of innovative pharmaceuticals through improvement of R&D environments

Generic Drugs - Roadmap for the Promotion of Sale and Use

Towards the achievement of the Government's goal "to have a market share of generic drugs of more than 60% by the end of fiscal year 2017(H29)"

Measure of the promotion

Stable supply
Assurance of quality
Information provision by generic manufacturers
Improvement of the environment for the promotion of use
Matters concerning the medical insurance system
Monitoring the state of the implementation of the roadmap

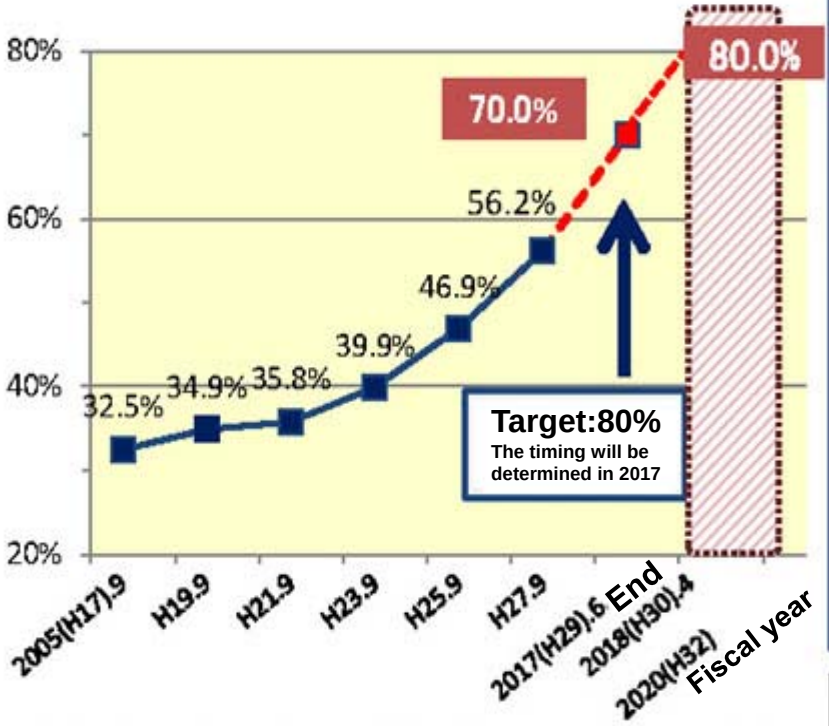
Public announcement from MHLW (April 5, 2013)

Recent Reinforcement of the Roadmap

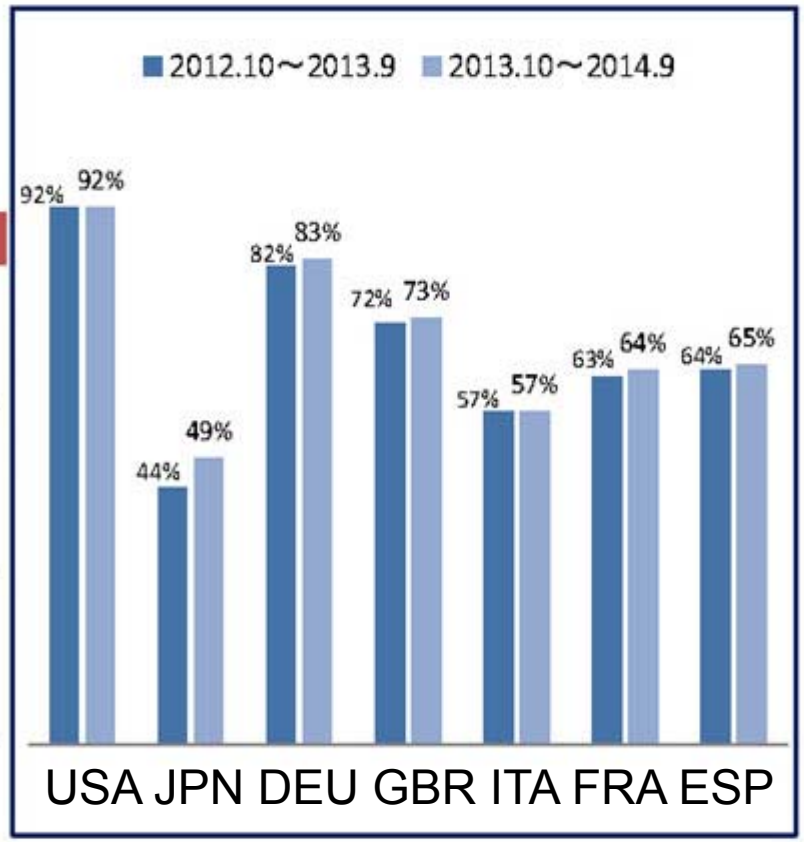
Trends of Share of Generic Drugs in Japan

Targets of Share (amount)*

1) More than 70%: mid-year of 2017(H29)
2) More than 80%: as fast as possible before March 2021(H33)



Share of Generic Drugs in several countries



Ref. ©2015IMS Health, MIDAS, Market Segmentation, MAT Sep 2013, RX only (PRESCRIPTION BOUND)
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$$\text{Share (amount)}^* = \frac{\text{generics}}{\text{off-patent originator medicines + generics}}$$

Cabinet decision (June 2015)

List of Biosimilars approved in EU, USA, and JAPAN

Non proprietary name	Reference product	Biosimilar trade name	company	Approved year EU	USA	Japan
inslin glargine	Lantus	Abasaglar	Eli Lilly	2014	-	-
inslin glargine	Lantus	Basaglar	Eli Lilly	-	2016	-
inslin glargine [insulin glargine BS1]	Lantus	Insulin glargin BS Inj. [Lilly]	Lilly	-	-	2014
inslin glargine [insulin glargine BS2]	Lantus	Insulin glargin BS Inj. [FFP]	FUJIFILM Pharma	-	-	2016
somatropin	Genotropin	Omnitrope	Sandoz	2006	2006*	-
somatropin	Genotropin	Somatropin BS Inj. [Sandoz]	Sandoz	-	-	2009
-	Eprex/Erypo	Binocrit	Sandoz	2007	-	-
-	Eprex/Erypo	Epoetin alfa Hexal	Hexal Biotech	2007	-	-
-	Eprex/Erypo	Abseamed	Medicine Arzneimittel	2007	-	-
epoetin zeta	Eprex/Erypo	Silapo	Stada Arzneimittel	2007	-	-
epoetin zeta	Eprex/Erypo	Retacrit	Hospira	2007	-	-
epoetin kappa [epoetin alfa BS1]	Espo	Epoetin alfa BS Inj. [JCR]	JCL pharma	-	-	2010
filgrastim	Neupogen	Tevagrastim	Teva Generics	2008	-	-
filgrastim	Neupogen	Biograstim	CT Arzneimittel	2008	-	-
filgrastim	Neupogen	Ratiograstim	Rationpharm	2008	-	-
filgrastim	Neupogen	Zarzio	Sandoz	2009	-	-
filgrastim	Neupogen	Filgrastim Hexal	Hexal Biotech	2009	-	-
filgrastim	Neupogen	Nivestim	Hospira	2010	-	-
filgrastim	Neupogen	Grastofil	Apotex Europe	2013	-	-
filgrastim	Neupogen	Accofil	Accord	2014	-	-
filgrastim-sndz	Neupogen	Zarxio	Sandoz	-	2015	-
filgrastim [filgrastim BS1]	Gran	Filgrastim BS Inj. [Mochida], [F]	mochida, Fuji	-	-	2012
filgrastim [filgrastim BS2]	Gran	Filgrastim BS Inj. [NK], [Teva]	Nippon Kayaku, Teva	-	-	2013
filgrastim [filgrastim BS3]	Gran	Filgrastim BS Inj. [Sandoz]	Sandoz	-	-	2014
follitropin alfa	Gonal-f	Ovaleap	Teva Pharma	2013	-	-
follitropin alfa	Gonal-f	Bemfola	Merck Serono	2014	-	-
infliximab	Remicade	Inflectra	Hospira	2013	-	-
infliximab	Remicade	Remsima	Celltrion	2013	-	-
infliximab	Remicade	Flexabi	Biogen	2016	-	-
infliximab-dyyb	Remicade	Inflectra	Celltrion/Hospira	-	2016	-
infliximab [infliximab BS1]	Remicade	Infliximab BS Inj. [NK]	Nippon Kayaku	-	-	2014
etanercept	Enbrel	Benepali	Biogen	2016	-	-

(By Dr Akiko Ishii-Watabe of NIHS)

*approved under FDC Act 505(b)(2)

OTC drugs — Driving to Self-Medication

1．リスクの程度に応じた情報提供と相談体制の整備

・リスクの程度に応じて一般用医薬品を３つに分類します。

第１類医薬品：特にリスクが高いもの

一般用医薬品としての使用経験が少ない等、安全性上特に注意を要する成分を含むもの

（例）Ｈ２ブロッカー含有薬、一部の毛髪用薬等

第２類医薬品：リスクが比較的高いもの

まれに入院相当以上の健康被害が生じる可能性がある成分を含むもの

（例）主なかぜ薬、解熱鎮痛薬、胃腸鎮痛鎮けい薬等

第３類医薬品：リスクが比較的低いもの

日常生活に支障を来す程度ではないが、身体の変調・不調が起こるおそれのある成分を含むもの

（例）ビタミンＢ・Ｃ含有保健薬、主な整腸薬、消化薬等

・リスクの程度に応じた情報提供を行います。

リスク分類	対応する専門家	購入者から質問がなくても積極的に行う情報提供	購入者側から相談があった場合の応答
第１類医薬品	薬剤師	書面を用いて、適正使用のために必要な情報提供を行わなければならない。	義務
第２類医薬品	薬剤師又は登録販売者※	適正使用のために必要な情報提供に努めなければならない。	
第３類医薬品		不要	

※今回の薬事法改正により新たに導入された、都道府県知事の行う資質確認のための試験に合格し、登録を受けた専門家

厚生労働省

平成21年6月1日から一般用医薬品（大衆薬）の販売方法が変わります。

自分にあった一般用医薬品を安心して購入し、使っていただくために、リスクを最小限に抑え、効き目が最大限に発揮できるよう、医薬品のリスクの程度に応じて専門家がアドバイスするなど次のような一般用医薬品の販売制度改正が平成21年6月1日から施行されました。

・一般用医薬品のリスク区分
・購入時の専門家による情報提供
・リスク区分に関する外箱等の表示
・医薬品の陳列方法
・店舗における販売体制
・店舗における掲示事項
・通信販売に関する規定の整備

厚生労働省

一般用医薬品販売制度ホームページ

http://www.mhlw.go.jp/bunya/iyakuhin/ippanyou/index.html

Globalization of drugs

- Supply chain of source materials
- Production of drugs
- Distribution of products

Source of Drug Substances for Generics (1)

Source of drug substances used for the production of generics listed in National Health Insurance Drug Price Standard in Japan（2011.4 – 2012.3）

	Amount(shipping base)（million yen）		Number of products	
		ratio		ratio
Products all of whose production process is carried out in Japan	195,251	30.9%	2,896	37.5%
Products whose intermediates are imported and produced through chemical reactions in Japan	36,443	5.8%	538	7.0%
Products which are purified or processed from imported crude products or imported as final products	51,753	8.2%	586	7.6%
Products whose drug substances are imported.	288,888	45.8%	3,672	47.5%

From the Research Report about Evaluation Standards of Generics for improving their reliability (2013.3）

Source of Drug Substances for Generics (2)

	Number of company	Ratio	Purchased amount (ten thousands yen)	Ratio	Number of substances	Ratio
Total	1,539		6,635,569		1,893	
USA	57	3.7%	243,793	3.7%	64	3.4%
Mexico	18	1.2%	17,773	0.3%	23	1.2%
France	54	3.5%	97,469	1.5%	80	4.2%
Switzerland	43	2.8%	177,892	2.7%	47	2.5%
Germany	47	3.1%	54,794	0.8%	61	3.2%
Italy	332	21.6%	592,812	8.9%	426	22.5%
Spain	101	6.6%	659,558	9.9%	127	6.7%
Hungary	47	3.1%	559,413	8.4%	58	3.1%
Check	16	1.0%	52,840	0.8%	32	1.7%
Israel	53	3.4%	233,226	3.5%	74	3.9%
China	245	15.9%	815,755	12.3%	265	14.0%
Korea	226	14.7%	2,060,048	31.0%	298	15.7%
Taiwan	37	2.4%	60,445	0.9%	43	2.3%
India	173	11.2%	475,182	7.2%	194	10.2%

From the Research Report about Evaluation Standards of Generics for improving their reliability (2013.3)

Today's topics

- Background:　Changes in the environments for drugs
- Expected role of Japanese Pharmacopoeia to deal with the changes

For New Drugs

- General notices and General rules：
  - Catch-up development trends (especially General Rules for Preparations) and innovation of quality control
- General tests：
  - List standard quality tests and their updates catching-up innovation of quality tests
  - Actively list standard in-process tests
- Monographs：
  - Show the standard form of specification of drugs in license application
  - Actively list drugs developed in Japan

For Generic Drugs

- General notices and General rules：
  - Cover the basic requirements for quality control of generic drugs in Japan
- General tests：
  - List all standard quality tests of generic drugs including in-process tests
- Monographs：
  - List specifications of standard generic drugs as many as possible in Japan

- Would become comprehensive guidance for quality control of generic drugs in Japan

Impact of JP on Generic Drug Assessment

- JP plays a crucial role in ensuring quality of generic drugs in Japan

Modernization of JP

Modernization of Quality Control of Generic Drugs in Japan

Access to High Quality Generics 

Medical Expense 

For Biosimilars(BS)

- Should become comprehensive quality guidance of BS, but inventive approach will be needed
- For example
  - General rules for biotechnological/biological products: including the basic requirement for quality control of BS
  - General tests for BS： Listing standard quality tests for BS
  - Monographs of BS：General Monograph, Typical one, or the others ??
    - BS of IgG antibody drug may be one of the first candidate of the monograph

From the View Point of Globalization of Drugs (1)

- Should become the strategic tool showing the basic principles in quality control of drugs in Japan

  ← JP is one of the few Japanese drug standards whose English translation has been officially and systematically published.

- From the Pharmacopoeia used in Japan to that used internationally (= The Pharmacopoeia, able to be understood, referred to, and used in foreign countries)

  → (1) International distribution of JP reference standards

  (2) Set the test conditions considering the performance not only in Japan but also in foreign countries

From the View Point of Globalization of Drugs (2)

- Should continue the active contribution to the WHO-initiated International Meeting of World Pharmacopoeias as well as Pharmacopoeial Discussion Group（PDG)
  - Mutual understanding

  - Mutual recognition

    or

  - Harmonization

Thank you for your attention！ ！