The impact of pharmaceutical policies on pharmaceutical sales patterns in Sweden and Japan

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[Background]
Maintaining resources spent on health care and striving to maximize health benefits is important in most health systems. Health and pharmaceutical expenditure have increased. In Sweden, the introduction of mandatory generic substitution was associated with a slower increase both for patients’ and society’s pharmaceutical expenditures in 2002. (Andersson K, et al, 2007;81(2-3):376-84)

In Japan, Japanese government had introduced some pharmaceutical policy changes. However, there is still room for discussion about new strategies for cost-containment on health.

[Aims]
To study the impact of patent expiry and new medical information on pharmaceutical sales pattern in Sweden and Japan.

[Methods]
Outcome measure; sales volume (DDD/1,000 inhabitants per day, Quarterly)
Selected drugs; ACE inhibitors (ACEs; ATC code C09A), Angiotensin II antagonists (ARBs; ATC code C09C)
Data source; <Sweden> from the Swedish eHealth Agency (e-hälsomyndigheten); <Japan> Drug sales data (by IMS Japan)
Statistical analysis
The time-series autoregressive-moving average (ARIMA) modelling with seasonal and interventions.
1. Forecast some models from outcome time series
2. Select an ARIMA model most matched
Using the BIS-Jenkins methodology
3. The selected model yields efficient estimates of the effect of interventions

Intervention; A= patent expiry, B= new drug information
This analysis was used SAS ver. 9.2

[Conclusion]
we found that the sales pattern of selected drugs were changed when new information on the medicines was launched and not by the patent expiry in Sweden. We didn’t find the phenomenon of switching of sales pattern from candesartan to any drugs which had been well evaluated and was cheaper in Japan. Pharmaceutical policies in two countries, especially, restricted Swedish generic substitution and recommendation of generic substitution in Japan influences on this phenomenon and differences.

Table 1. Time series intervention analysis of the effect of patent expiries and interventions on sales volume of selected drugs in Japan and Sweden. (DDD/1,000 inhabitants per day)

![Table 1](image)

Fig.1 Sales pattern of ARBs in Japan and in Sweden

A : Coefficient of patent expiry, B : Coefficient of NDI

![Fig.1](image)