A Cost/Cost-Utility Analysis of Cefaclor Hypersensitivity in South Korea

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Background

1. Cefaclor is one of the frequently prescribed antibiotics in South Korea.
2. Cefaclor is associated with hypersensitivity reactions, especially anaphylaxis.

→ Cefaclor Hypersensitivity can be an important issue in South Korea.

Purpose

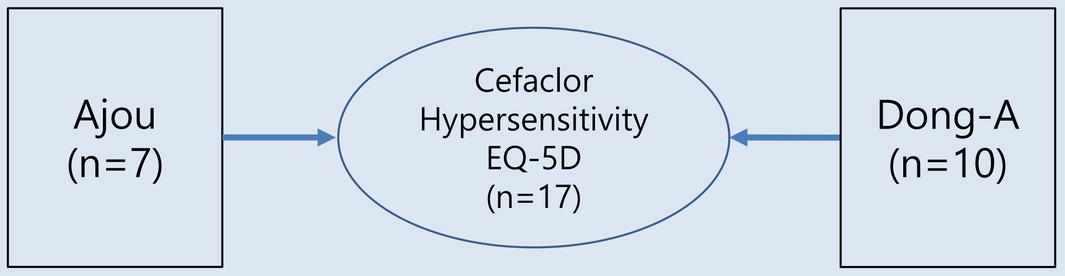
1. Estimate the Cost of Cefaclor Hypersensitivity.
2. Cost-Utility Analysis of Cefaclor Hypersensitivity between the severity of the Cefaclor Hypersensitivity.

Method

Table 1. Data sources of estimating Cefaclor Hypersensitivity Cost.
(Restricted Societal Perspective)

Cost Category	Data Source
Direct Medical Cost	1. Ajou University Hospital Medical Record (n=320) 2. Dong-A University Hospital Medical Record (n=87)
Direct Non-Medical Cost (transportation cost)	1. Korea Health Panel Study Ver1.5 (KIHASA, NHIS) 2. Consumer Price Index (Statistics Korea)

Figure 1. Data sources of estimating Cefaclor Hypersensitivity Quality Of Lives.



- Cost analysis/Comparing Utility analysis was analyzed by p-value through Student t-test, and statistical significance level was 0.05.

Result

Table 2. Cost Analysis Result < Mean (SD) [Min, Max] >
(1 USD = 1,100.58 KRW, Based on 2018 exchange rate)

< Unit: USD >	Cefaclor Hypersensitivity Severity		p-value
	Mild-to-Moderate	Severe	
Total Cost	604 (855) [14, 9,626]	869 (563) [18, 3,330]	<0.001***
- Direct Medical Cost			
Consultant Cost	89 (101) [2, 875]	97 (65) [0, 402]	0.303
Examination Cost	379 (366) [0, 3,620]	576 (296) [0, 1,717]	<0.001***
Treatment Cost	58 (369) [0, 4,822]	68 (195) [0, 2,233]	0.712
Hospitalization Cost	63 (291) [0, 3,658]	105 (229) [0, 1,248]	0.105
Other Cost	2 (5) [0, 44]	4 (7) [0, 33]	0.002***
Coverage Cost	424 (687) [0, 8,789]	594 (430) [0, 2,728]	0.003***
Non-Coverage Cost	166 (385) [0, 4,919]	257 (191) [0, 1,242]	0.002***
Copayment Cost	373 (469) [4, 5,150]	505 (275) [7, 1,472]	<0.001***
Subtotal cost (Direct Medical Cost)	590 (849) [12, 9,572]	851 (554) [16, 3,289]	<0.001***
- Direct Non-Medical Cost			
Transportation Cost	14 (14) [1, 102]	18 (15) [1, 75]	0.003***

*: p<0.01, **: p<0.05, ***: p<0.001

- Cost data for data for an average of 113.6 days

In terms of **Direct Medical Cost** and **Direct Non-Medical Cost** and **Total Cost**,
the severe cases were higher than mild-to-moderate cases and were statistically significant.

Table 3. Cost-Utility Analysis of Cefaclor Hypersensitivity Result
(1 USD = 1,100.58 KRW, Based on 2018 exchange rate)

	Cefaclor Hypersensitivity Severity	
	Mild-to-Moderate	Severe
Annual Cost per person < Unit: USD (KRW) >	1,939 (2,134,477)	2,793 (3,073,618)
Utility per person§ < Unit: QALYs >	0.787	0.800

§ The utility difference according to the severity is not statistically significant.

[Comparator: Mild-to-Moderate Cefaclor Hypersensitivity]

· Difference in Annual cost per person:
USD 853 (KRW 939,141)

· Difference in Utility per person: 0.013153846 QALYs

→ **ICER** = 64,872 USD/QALY (71,396,684 KRW/QALY)

Conclusion

· In the Severe case, the cost of Cefaclor Hypersensitivity was higher.

· However, the Severe case was not cost-effective compared to Mild-to-Moderate case.

<Limitation> Study that uses more Cefaclor Hypersensitivity cost & EQ-5D data is needed.

References

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< This study was funded by Korea Institute of Drug Safety and risk management(KIDS) >