

The change of adherence to a process quality-of-care-indicator after the initiation of clinical audit in Korea

Soo-Kyung Kim¹, Se-Hwa Kim², Kyung Do Han³, Eun-Mi Kim⁴, Jin-Sook Cho⁴, Seok-O Park⁵, Tea Sun Park⁶, Yong-Wook Cho¹

¹ Department of Internal Medicine, CHA Bundang Medical Center, CHA University, Seongnam, Korea; ² Department of Internal Medicine, Catholic Kwandong University, Incheon, Korea;

³ Department of Biostatistics, College of Medicine, The Catholic University of Korea, Seoul, Korea; ⁴ Health Insurance Review & Assessment Service, Wonju, Korea;

⁵ Department of Internal Medicine, Kwangmyung Sungae Hospital, Gwangmyeong, Korea; and ⁶ Department of Internal Medicine, Chonbuk National University Hospital, Chonbuk National University Medical School, Jeonju, Korea

Abstract

Background: Adherence to recommended guideline for monitoring of glucose control and screening of diabetic complication has been demonstrated to prevent the chronic complications of diabetes. In Korea, the clinical audit of quality of diabetes care has been started in 2011. The aim of this study is to investigate the change of adherence to a process quality-of-care-indicator in diabetes after the initiation of audit in Korea.

Methods: This retrospective study was performed using the national health insurance claims database from the Health Insurance Review & Assessment Service (HIRA) of Korea, from 2009 to 2014. Study patients were aged 30 years or older, had type 2 diabetes, had taking at least one hypoglycemic agent in only one attending clinic at 2009, and had no history of any diabetes-related chronic complications including cardiovascular diseases before December, 2010, cancer, or ≥ 90 days of admission (n=280,698). Process indicators included measurement of HbA1c more than once a year, annual measurement of lipid, annual examination for retinopathy and nephropathy.

Results: The number of patients receiving HbA1c and lipid measurement at least once a year increased to 69.9 and 54.5% in 2014 from 52.7 and 32.5% in 2009. Although the annual screening of nephropathy and retinopathy is also increased gradually, it is still low at 16.5 and 24.5% in 2014. Despite a gradual increase in the proportion of patients who underwent annual measurement of HbA1c and lipid and annual screening for retinopathy and nephropathy, only 6.1% of the patients met all four criteria in 2014 (1.5% in 2009 and 3.9% in 2011).

Conclusion: Although there were improvements in adherence to each process quality-of-care indicator, the percentage of patients undergoing all four examinations annually remained still very low.

Table 1. Percentage of patients receiving HIRA recommended care processes and state prescribing OHA by audit year

	2009	2010	2011	2012	2013	2014
N	280,698	280,698	279,295	277,617	276,048	274,393
HbA1c measurement, more than once a year (N, [%])	147,911 (52.7)	143,212 (51.0)	171,279 (61.3)	179,382 (64.6)	185,967 (67.4)	191,868 (69.9)
HbA1c measurement, at least twice a year (N, [%])	61,780 (22.0)	67,261 (24.0)	79,255 (28.4)	89,194 (32.1)	97,442 (35.3)	102,409 (37.3)
Lipid measurement, more than once a year (N, [%])	91,329 (32.5)	91,722 (32.7)	110,723 (39.6)	119,631 (43.1)	126,988 (46.0)	149,417 (54.5)
Measurement of urinary albumin excretion (UAE), more than once a year (N, [%])	13,744 (4.9)	15,255 (5.4)	26,802 (9.6)	32,989 (11.9)	39,388 (14.3)	45,241 (16.5)
Ophthalmologic examination, more than once a year (N, [%])	36,596 (13.0)	28,247 (13.6)	56,575 (20.3)	59,181 (21.3)	64,592 (23.4)	67,157 (24.5)
HbA1c + Lipid (N, [%])*	84,119 (30.0)	85,482 (30.5)	105,227 (37.7)	114,411 (41.2)	122,350 (44.3)	144,110 (52.5)
HbA1c + Lipid + UAE (N, [%])*	12,111 (4.3)	13,588 (4.8)	23,934 (8.6)	29,074 (10.5)	35,354 (12.8)	42,022 (15.3)
HbA1c + Lipid + Ophthalmologic examination (N, [%])*	15,114 (5.4)	16,025 (5.7)	28,764 (10.3)	31,957 (11.5)	36,389 (12.2)	42,882 (15.6)
HbA1c + Lipid + UAE + Ophthalmologic examination (N, [%])*	4,287 (1.5)	4,475 (1.6)	10,810 (3.9)	12,122 (4.4)	14,728 (5.3)	16,858 (6.1)
Oral hypoglycemic agent (OHA) possession ratio $\geq 80\%$						
Total	169,146 (60.3)	188,736 (67.2)	194,501 (69.6)	199,322 (71.8)	202,437 (73.3)	201,626 (73.5)
Tertiary general hospital	13,383 (66.6)	14,010 (74.9)	13,868 (73.9)	13,548 (77.1)	14,345 (80.9)	14,662 (80.3)
General hospital	12,004 (54.2)	13,635 (68.8)	14,378 (71.3)	15,851 (76.1)	17,530 (77.8)	19,061 (78.2)
Hospital	8,756 (45.9)	10,213 (61.9)	10,520 (66.5)	11,279 (73.0)	11,208 (74.5)	11,020 (74.6)
Private clinic	135,003 (61.6)	150,878 (72.3)	155,735 (75.8)	158,644 (78.0)	159,354 (79.6)	156,883 (80.1)
Quality of care (N, [%])						
Best**						
Total	2,926 (1.0)	3,506 (1.3)	8,099 (2.9)	9,545 (3.4)	12,054 (4.4)	13,670 (5.0)
Tertiary general hospital	2,174 (10.8)	2,272 (12.2)	4,239 (22.6)	3,736 (21.3)	4,387 (24.8)	4,345 (23.8)
General hospital	372 (1.7)	542 (2.7)	1,456 (7.2)	2,113 (10.1)	2,767 (12.3)	3,113 (12.8)
Hospital	36 (0.2)	63 (0.4)	196 (1.2)	314 (2.0)	426 (2.8)	440 (3.0)
Private clinic	344 (0.2)	629 (0.3)	2,208 (1.1)	3,382 (1.7)	4,474 (2.2)	5,772 (3.0)
Good†						
Total	52,629 (18.8)	63,348 (22.6)	79,149 (28.3)	88,695 (32.0)	96,783 (35.1)	114,316 (41.7)
Tertiary general hospital	10,020 (49.8)	10,473 (56.0)	10,917 (58.2)	10,950 (62.3)	11,639 (65.7)	12,179 (66.7)
General hospital	5,861 (26.4)	6,874 (34.7)	8,447 (41.9)	9,997 (48.0)	11,744 (52.1)	13,419 (55.0)
Hospital	2,617 (13.7)	3,402 (20.6)	4,280 (27.1)	5,023 (32.5)	5,519 (36.7)	6,306 (42.7)
Private clinic	34,131 (15.6)	42,599 (20.4)	55,505 (27.0)	67,725 (30.8)	67,881 (33.9)	82,412 (42.1)

* Measured at least once a year, respectively; ** HbA1c measurement, at least semiannual + lipid measurement, at least once a year + measurement of UAE, at least once a year + OHA possession ratio $\geq 80\%$; † HbA1c measurement, at least once a year + lipid measurement, at least once a year + OHA possession ratio $\geq 80\%$.

