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Changes in prescription of oral hypoglycemic agents after introduction of DPP-4 inhibitors in a diabetes clinic in Japan

Yoshitaka Akiyama, Tomoko Morita, Yoshimi Abe, Chieko Morisawa, Anna Sakashita, Shoji Kawazu, Eiji Omura, Seiki Wada, Mitsugu Tokunaga, Shinya Minagawa, Masako Yazawa, Mie Koike, and Masafumi Matsuda

Department of Endocrinology and Diabetes, Saitama Medical Center, Saitama Medical University, Saitama, JAPAN

Aim

Introduction of sitagliptin in 2009 and the following other dipeptidyl peptidase (DPP)-4 inhibitors have been giving a great impact on medical intervention for the treatment of diabetic patients in Japan. Therefore the aim of this study is to investigate the differences in prescription of oral hypoglycemic agents (OHAs) before and after the introduction of DPP-4 inhibitors, and its impact on glycemic controls in our diabetes clinic.

Methods

We analyzed retrieved electrical medical records from 2009 to 2012. Data were summarized each fiscal year starting from April. Physicians keep regulation of health insurance policies in Japan, and clinical practice guidelines issued from the Japanese Diabetes Society. Statistics were conducted by IBM SPSS Statistics 21 (IBM, USA).

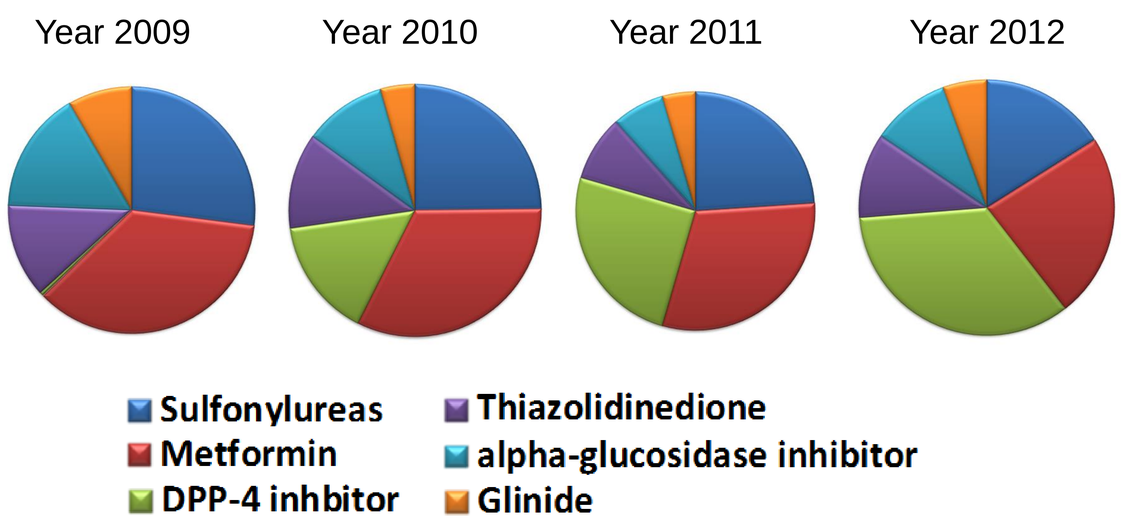
Subjects

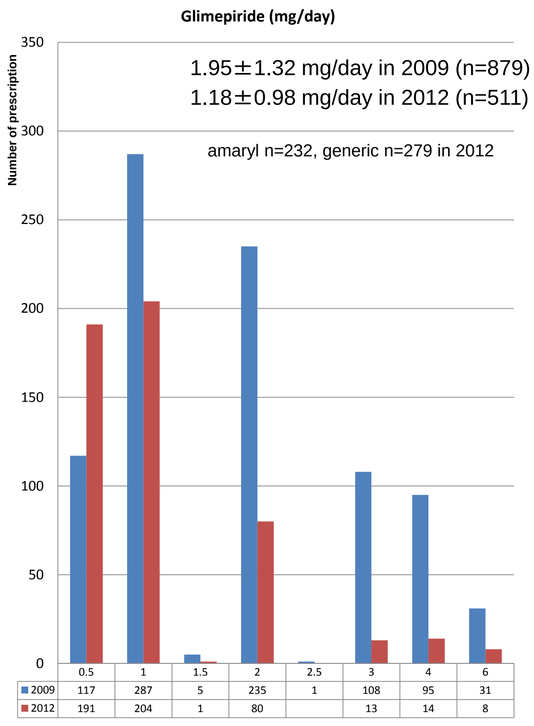
	Number of diabetic patients at the clinic	Number of patients who use OHAs (M/F)	Average HbA1c (%)
Year 2009	2725	2100 (1185/915)	7.3±1.3*
Year 2012	2153	1689 (961/728)	7.1±1.0*

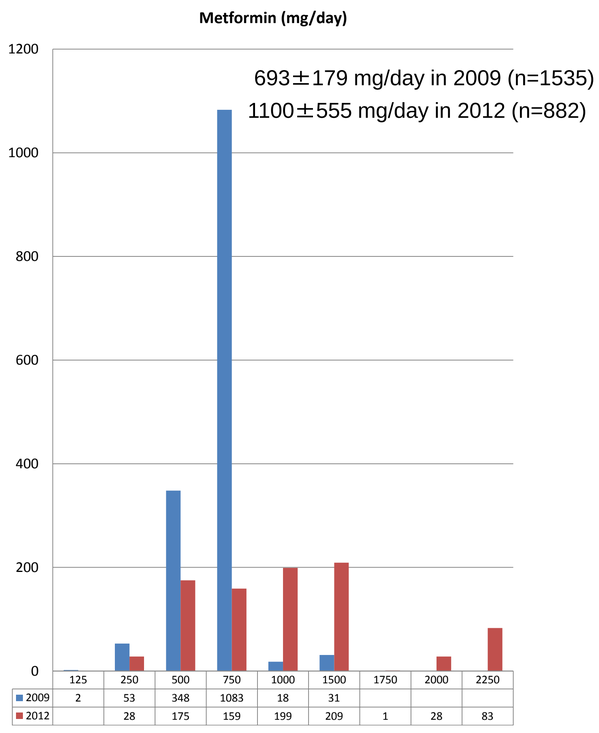
Diabetic patients excluding type 1 diabetes and gestational diabetes

Fiscal year 2009 (Year 2009) started from April 1, 2009 and ended on March 31, 2010.
Fiscal year 2012 (Year 2012) started from April 2, 2012, and ended on March 31, 2013.
(*:Average of all diabetic patients)

Results







HbA1c(NGPS) of patients who continue to visit more than two years during year 2009 to year 2012

	visit	HbA1c	<6%	≧6% <7%	≧7% <8%	≧8% (%)	<7% (%)
≧2years (878)	first	7.4 ± 1.6	13	32	24	31	45
	last	7.1 ± 1.3	15	38	23	24	53
≧3years (920)	first	7.6 ± 1.4	5	28	32	36	32
	last	7.1 ± 1.2	10	44	28	18	54
≧4years (1281)	first	7.6 ± 1.3	6	29	34	31	36
	last	7.2 ± 1.2	10	42	29	19	52

Percentage of patients under fixed HbA1c levels

Diet only

	visit	HbA1c	<6%	≧6% <7%	≧7% <8%	≧8% (%)	<7% (%)
≧2years (186)	first	6.5 ± 1.0	29	44	12	14	73
	last	6.5 ± 0.9	20	40	12	28	60
≧3years (70)	first	6.7 ± 0.6	11	39	21	29	51
	last	6.6 ± 0.8	16	60	19	5	76
≧4years (137)	first	6.4 ± 0.6	34	51	14	1	85
	last	6.3 ± 0.8	34	54	9	2	88

Oral hypoglycemic agents

	visit	HbA1c	<6%	≧6% <7%	≧7% <8%	≧8% (%)	<7% (%)
≧2years (343)	first	7.5 ± 1.3	6	34	30	29	40
	last	7.1 ± 1.1	9	44	29	18	52
≧3years (471)	first	7.5 ± 1.0	2	31	41	26	34
	last	6.9 ± 0.9	7	53	29	11	60
≧4years (580)	first	7.5 ± 1.0	3	32	41	24	35
	last	7.0 ± 0.9	7	50	33	10	58

GLP-1 agonist

	visit	HbA1c	<6%	≧6% <7%	≧7% <8%	≧8% (%)	<7% (%)
≧2years (15)	first	7.9 ± 1.7	6	12	53	29	18
	last	7.0 ± 0.9	6	41	47	6	47
≧3years (22)	first	8.0 ± 1.5	7	11	33	48	19
	last	7.0 ± 1.1	19	37	22	22	56
≧4years (34)	first	8.1 ± 0.9	0	15	26	59	15
	last	7.2 ± 1.3	6	47	26	21	53

Insulin

	visit	HbA1c	<6%	≧6% <7%	≧7% <8%	≧8% (%)	<7% (%)
≧2years (334)	first	7.9 ± 1.9	11	24	22	44	35
	last	7.2 ± 1.5	19	32	22	28	51
≧3years (357)	first	8.0 ± 1.7	5	22	23	49	27
	last	7.5 ± 1.6	12	29	29	29	42
≧4years (530)	first	8.0 ± 1.5	3	21	32	44	25
	last	7.6 ± 1.4	6	30	30	34	36

(n)

Conclusion

These dramatic changes in prescription improved glycemic controls. Decrease use of sulfonylureas both in frequency and doses was another benefit after the introduction of DPP-4 inhibitors. This may decrease frequency of hypoglycemia and may prevent from increment of body weight. Although we did not experience serious adverse events from DPP-4 inhibitors, the safety during long-term use remains to be proved. The further observation of patients should be warranted.

There is no conflict of interest in this study.