# Abstract submission website

*Clinical therapeutics*

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## COMBINATION OF METFORMIN OR PIOGLITAZONE WITH A DPP-4 INHIBITOR TO MAINTEIN GLUCOSE CONTROL IN TYPE 2 DIABETIC PATIENTS IN A CLINICAL SETTING IN JAPAN

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**What is your preferred presentation method?:** Either an oral or poster presentation

**Do you wish to apply for a travel grant?:** Yes

**Background:** Impaired insulin secretion and decreased insulin sensitivity are two major important pathological features of type 2 diabetes mellitus. Therefore it would be advantageous, if two agents are combined together in clinical practices; one enhances insulin secretion and another increases insulin sensitivity. Metformin (Met) and Pioglitazone (Pio) are enhancers of insulin sensitivity, while DPP4 inhibitors (DPP4i) facilitates insulin secretion. We analyzed data obtained from patients who were treated in our clinic to demonstrate the durability of such combination in clinical settings.

**Method:** We obtained the clinical data from the electronic medical records system, and analysed the data obtained from type 2 diabetic patients who were treated with Met (Group M) or Pio (Group P) with DPP4i more than 3 months from 2009 to 2013. A clinical choice of treatment was decided by physicians in charge in our clinic. Clinical practices have been guided by “Treatment Guide for Diabetes 2009-2013”. Statistics were conducted by SPSS ver.22.

**Result:** 838 type 2 diabetic subjects (M/F = 421/417, 59±9 y.o., duration of diabetes = 12±9 years, BMI = 24±5 kg/m$^2$) received either combination with (n=128) or without other medication including insulin (n=718). The same prescription without changing doses was continued for at least 450±258 and 470±249 days in Group M and P respectively. Average dose of metformin and pioglitazone was 1856±234mg/day and 23.4±3.2mg/day respectively. DPP4i included sitagliptin (57±12mg/day, n=124), vildagliptin (98±3, 45), alogliptin (23±6, 3), and teneligliptin (20±12, 10). HbA1c was reduced from 8.11±1.31 to 7.40±1.27% in Group M (n=564) and 8.06±1.67 to 7.47±1.45% in Group P (n=274). When patients who received other medication were excluded, HbA1c was reduced from 7.43±1.25 to 6.32±1.12% in Group M (n=36) and 7.52±1.47 to 6.47±1.25% in Group P (n=40) in 425±125 and 670±320 days respectively. Combination of DPP4i and sulfonylrea only had duration of the same prescription for 245±123 days (n=23).

**Conclusion:** Both combination of Met and Pio with DPP4i are effective and durable treatments in type 2 diabetic patients. Although the actual pharmaceutical value of combination may not be addressed in this analysis, the result supports the usefulness of such combinations in clinical settings. Since DPP-4 inhibitors were used as the first-choice medication in Japan, furhter investigation would be necessary to clarify the best partner of DPP-4 inhibitors.

**Disclosure of Interest**: None Declared