

The long term effect of metformin plus DPP-4 inhibitor switching from metformin plus pioglitazone combination therapy in Type 2 diabetes

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Background

- Two years ago, we presented the short term 6 month results of metformin plus DPP-4 inhibitor combination therapy when we can't reach the target below 7% of HgA1c with metformin plus pioglitazone combination that is best in terms of relieving insulin resistance in early diabetes,
- Switching the pioglitazone to the DPP-4 inhibitor that improves insulin secretory dysfunction can be the next useful step to attain glucose control goal.
- DPP-4 inhibitors that increase insulin secretion by glucose dependent manner can also relieve insulin resistance because they improve first phase insulin secretion defect and prevent late hyperinsulinemia.
- DPP-4 inhibitor is also better than pioglitazone in weight aspect.

Method

- Total 111 patients were followed by 26.5 month (± 9.7) after switching from metformin plus pioglitazone.
- 15mg of pioglitazone that is usual dosage in this country was switched to DPP-4 inhibitors without changing the dose of metformin.
- The change of medication during follow up was examined.
- HgA1c level, insulin resistance index HOMA-IR, weight change before and after switching was compared in patients who maintained metformin plus first dose of DPP-4 inhibitor.

Result

- Sulfonylurea was added in 6% (7/111) and pioglitazone was added again in 7% (7/111) for adequate glucose control.
- The dose of DPP-4 inhibitor was decreased in 6% (7/111) during the follow up period.
- Metformin plus first dose of DPP-4 inhibitor was maintained in 80% (89/111).
 - The dose of metformin was increased in 41 % (40/89) and unchanged in 42% (41/89) and decreased in 7%.
 - The mean dose of metformin to maintain HgA1c target was elevated by 260 mg in the end.
 - HgA1c was improved in 76% (68/89) from 7.40% to 6.66% and the metformin dose was increased by 240 mg. HgA1c was aggravated in 22% (20/89) from 6.85% to 7.22%.
 - HOMA-IR was improved in 46% (0.91 ± 0.92) and aggravated in 53% (-1.25 ± 1.17). Mean HOMA-IR change was -0.24 ± 1.51 .
 - Mean weight was reduced by 2.23kg (± 3.17) as a whole. The weight was decreased in 72% (3.63 ± 2.51) and increased in 19% (1.77 ± 1.73).

Conclusion

Although the dose of metformin was slightly increased to maintain glucose control target with time, metformin plus DPP-4 inhibitor combination can be a good treatment option in controlling blood glucose & maintaining insulin resistance & weight control as compared to metformin plus pioglitazone combination.