

Effect of linagliptin on AVI and API, indices of vascular stiffness evaluated by an automatic blood pressure monitor

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Dipeptidyl peptidase 4 inhibitors (DPP4i) have been widely used for the treatment of type 2 diabetic patients. Effect of DPP4i on cardiovascular system is still controversial. Among drugs in this class, linagliptin has been shown to have beneficial effects to reduce incidents of cardiovascular events in an early preliminary analysis. Pasesa® blood pressure monitor (Shisei Datum, Tokyo, Japan) has received approval for medical use in Japan, and this automatic blood pressure monitoring apparatus measures blood pressure, heart rate, and pulse pressure, while simultaneously displaying the condition of central arteries near the heart (AVI) and the stiffness of peripheral blood vessels (API). In this study, we evaluated AVI and API when type 2 diabetic patients received linagliptin in clinical settings. Twenty six diabetic patients (M/F=16/10, age: 68±11y.o., duration of diabetes: 12±11yrs, HbA1c: 7.8±1.4%, BMI: 24±4kg/m², BP: 134±20/73±15mmHg) received linagliptin 5mg qd for 11.9 months on average. The application of this drug and clinical practice is conducted by physicians who practice based on clinical guidelines issued from the Japan Diabetes Society. Pasesa® was used to evaluate AVI and API on each visit. Although BP at the observation (135±21/70±14mmHg) was not different from the base line, HbA1c was reduced to 7.4±1.6% (p<0.05). AVI (from 23.6±8.4 to 22.6±6.6) and API (from 31.7±8.2 to 33.2±8.9) were not different significantly. While HDL-C was increased from 43±12 to 48±16 mg/dL, LDL-C was not decreased (from 95±21 to 102±31 mg/dL). CAROLINA study has been conducted to investigate the long term impact on cardiovascular morbidity and mortality by linagliptin. However the result will not be available until 2018. Our data indicate that there were not any deteriorate effects on AVI, API, and lipid profiles by linagliptin. Since glucose control has been improved it may be possible to expect some beneficial effects by this drug.