A lifestyle intervention or metformin prevented or delayed the onset of metabolic syndrome in persons at risk


Clinical impact ratings GP/FP/Primary care ***** IM/Ambulatory care ***** Endocrine *****

Q In persons with impaired glucose tolerance, does an intensive lifestyle intervention (ILS) or treatment with metformin plus standard lifestyle recommendations prevent onset or promote resolution of metabolic syndrome?

**METHODS**

In persons with impaired glucose tolerance, does an intensive lifestyle intervention (ILS) or treatment with metformin plus standard lifestyle recommendations prevent onset or promote resolution of metabolic syndrome?

**MAIN RESULTS**

The cumulative incidence of metabolic syndrome was lower in the ILS and metformin groups than in the placebo group (table). Resolution of metabolic syndrome was greater in the ILS group than in the placebo group (38% v 18%, p = 0.002; metformin and placebo groups did not differ for resolution (23% v 18%, p>0.05).

**CONCLUSIONS**

In persons with impaired glucose tolerance, an intensive lifestyle intervention or treatment with metformin plus standard lifestyle recommendations was more effective than standard lifestyle recommendations alone for preventing or delaying onset of metabolic syndrome.

Abstract and commentary also appear in ACP Journal Club.

**Commentary**

The Diabetes Prevention Research Group previously reported in a separate analysis that both ILS and metformin were effective in reducing risk of progression to type 2 diabetes, with ILS being approximately twice as effective as metformin. Metabolic syndrome, as defined by the National Cholesterol Education Program Adult Treatment Panel III, represents a cluster of cardiovascular risk factors that are associated with excess visceral abdominal fat and insulin resistance. Much of the excessive cardiovascular risk associated with impaired glucose tolerance is explained by concomitant presence of metabolic syndrome. The trial by Orchard et al found that the results for incidence of metabolic syndrome paralleled those for new onset diabetes, with ILS and metformin being more effective than placebo. However, ILS reduced cumulative incidence of 4 out of the 5 metabolic syndrome components (ie, all except low high density lipoprotein [HDL] cholesterol concentration), while metformin only reduced the cumulative incidence of 2: large waist circumference and high fasting plasma glucose concentration. The relatively modest targeted weight loss (7% of initial body weight) and amount and intensity of exercise (target 150 min/wk) with ILS might explain why HDL cholesterol was not affected; greater volume and intensity of exercise are probably needed to increase HDL cholesterol. Nevertheless, this trial provides additional evidence for the value of an individualised, structured, supervised ILS to reduce incidence of multiple cardiovascular risk factors that collectively constitute metabolic syndrome.

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