Omental Adipose Removal Decreases High Blood Pressure in Hypertensive Patients Independent of Body Mass Index

Methods

In this multicenter, cohort study, 133 patients with gastric or gynecological cancer were divided into 3 groups: non-hypertensive and omentum removed (NH&OR), hypertensive and omentum removed (H&OR), and hypertensive and omentum present (H&OP). The patients were followed up in sitting blood pressure (SBP), changes in related body mass index and metabolic indices. The time points of the 2 follow-up visits were 1 month ± 7 days after the operation before the start of chemotherapy and the endpoint of 8 ± 1 month.

Results

133 patients were included and all completed follow-up. H&OR group showed significant reductions in SSBP and SDBP at 1-m (-16.94/-10.50 mmHg, both P < 0.001) and 8-m endpoint (-16.00/-5.50 mmHg, P < 0.001 and P = 0.004). Little reductions were observed with BMI of patients in 3 groups (H&OR group: 24.60 kg/m² to 23.57 kg/m², NH&OR group: 23.45 kg/m² to 23.25 kg/m², H&OP group: 25.74 kg/m² to 25.24 kg/m², all P > 0.05). No correlation was found between baseline BMI and 8-m change of SSBP and SDBP in H&OR groups.

Comparison within each group pre-/post-operatively: In the H&OR group, triglyceride levels were significantly increased. In NH&OR group, triglyceride levels were also significantly increased, and only serum albumin levels were significantly decreased postoperatively. In H&OP group, 4 indices were significantly improved after surgery, including serum albumin, total bilirubin, direct bilirubin and fasting blood glucose levels.

Among the 3 groups, metabolic markers in the NH&OR group showed the least significant changes before and after the operation.

Conclusions

Resection of omental adipose tissue represents an impact for reducing SSBP and SDBP at 8 months in hypertensive patients independent of BMI, even in the non-obese hypertensive population.

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