Changes in predicted cardiovascular disease risk after biliopancreatic diversion surgery in severely obese patients

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Objective: To determine the impact of biliopancreatic diversion with duodenal switch (BPD-DS) surgery on cardiovascular risk profile and predicted cardiovascular risk in severely obese patients.

Methods: We compared 1-year follow-up anthropometric and metabolic profiles in severely obese who underwent BPD-DS (n=73) with controls (severely obese without surgery) (n=33). The 10-year predicted risk for coronary heart disease (CHD) was estimated using the Framingham risk-tool. We assigned 10-year and lifetime predicted risks to stratify subjects into 3 groups: 1) high short-term predicted risk (≥ 10% 10-year risk or diagnosed diabetes), 2) low short-term (< 10% 10-year risk)/low lifetime predicted risk or 3) low short-term/high lifetime predicted risk.

Results: During the follow-up period, body weight and body mass index decreased markedly in the surgical group (-52.1 kg and -19.0 kg/m² respectively, p<0.001) vs. (-0.7 kg and -0.3 kg/m², p=0.51). Weight loss in the surgical group was associated with a reduction in HbA1c (6.2 vs. 5.1 %), HOMA-IR (61.5 vs. 9.3), all lipoprotein levels, as well as blood pressure (p<0.001). The 10-year CHD predicted risk decreased by 43 % in women and 33 % in men, whereas the estimated CHD risk in the non surgical group did not change. Before surgery, none of the women and only 18 % of men showed low short-term/low lifetime predicted risk, whereas a significant proportion of subjects had high short-term predicted risk (36 % in women and 12 % in men). Following surgery, 52 % of women and 55 % of men have a low short-term/low lifetime predicted risk.

Discussion: These results highlight the cardiovascular benefits of BPD-DS and suggest a positive impact on predicted CHD risk in severely obese patients.

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