promoted the dissociation of epithelial tumour cell colonies, an effect which may be partly due to its phosphorylation of β-catenin. Phosphorylation of this molecule resulted in a loss of association between β-catenin and E-cadherin which may lead to impaired E-cadherin function. This work has also demonstrated that the HGF/SF receptor protein, c-met, is over-expressed in colorectal cancer tissues. Further research has shown the receptor to be fully functional. Thus inappropriate expression of the HGF/SF receptor protein may confer a selective advantage on neoplastic cells compared to the surrounding normal tissue cells by enhancing these cells’ response to HGF/SF.

The results of this research thus suggest a role for HGF/SF in vivo as a key regulator of tumour metastatic spread.

IN VIVO STUDY OF 11β-HYDROXYSTEROID DEHYDROGENASE (11BHS) ACTIVITY IN SUBCUTANEOUS ABDOMINAL ADIPOSE TISSUE

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Previous in vitro studies have demonstrated 11BHS type 1 (11BHS-1) o xo-reductase activity in adipose tissue. Visceral adipose stromal cell cultures showed o xo-reductase activity - converting cortisone to cortisol - but little o xo-reductase activity was found in subcutaneous adipose stromal cells. We have carried out an in vivo study of 11BHS-1 activity in subcutaneous abdominal adipose tissue with an arteriovenous (A-V) difference technique. We studied 34 subjects (male: female = 12:22). Median (interquartile range) age 44 (32-53), body mass index 32.8 (27.4 - 57.1) kg/m², total body fat 34.4 (1-71) kg; waisthip ratios: men 1.01 (0.85 - 1.2) and women 0.93 (0.75 - 1.1). Subjects were studied in the morning after an overnight fast. Canulars were inserted into a radial artery, a superficial epigastric vein (draining abdominal subcutaneous adipose tissue) and a deep forearm vein (draining muscle) in each subject. Blood flow in abdominal adipose tissue was measured by 1100-Xe washout. Simultaneous arterial, epipagastic venous and forearm venous serum samples were taken for analysis of cortisol and cortisone. Intra-assay CVs were 7.4% for cortisol and 8% for cortisone. For cortisone, there was a significant correlation (p=0.0003) AV difference of 4(-7) nmol/l - reflecting cortisone clearance across the subcutaneous abdominal adipose tissue bed. For cortisol there was a trend for arterial concentrations - 203 (142 - 292) nmol/l - to be lower than epipagastic venous concentrations - 224.5 (152 - 263) nmol/l, but the difference was not significant. There were no significant AV differences across the deep forearm compartment for either cortisol or cortisone. The cortisone clearance rate in abdominal adipose tissue correlated (r=0.35, p=0.05) with total body fat. Our results show net 11BHS-1 o xo-reductase activity in subcutaneous adipose tissue in vivo which may be upregulated in obesity.

DIETARY COPPER SUPPLEMENTATION REDUCES AORTIC Atherosclerosis IN THE CHOLESTEROL-FED RABBIT

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Epidemiological evidence correlates elevated serum copper levels to increased future risk of myocardial infarction in humans. NZW rabbits were fed either chow + 1% cholesterol (n=8), chow + 1% cholesterol + 0.2% copper acetate (n=8) or chow (n=8) for 13 weeks. Weekly blood samples were assessed for cholesterol, copper and ferridoxin activities. Rabbits were killed by anaesthetic overdose and half were perfusion fixed with 4% paraformaldehyde in isotonie PBS. Aortae were removed and segments taken for copper content, copper content (p<0.05). Aortic intima:medial ratio was significantly lower in chow (1.36) compared with chow + copper (1.17). Copper supplementation reduces atherosclerosis may have implications for dietary copper supplementation may reduce atherosclerosis may have implications for future dietary policy. We thank the British Heart Foundation for support.