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Introduction NAFLD is characterised by steatosis, chronic inflammation and fibrosis. The underlying mechanisms include insulin resistance, increased free fatty acid flux from de-novo lipogenesis and decreased lipid oxidation. Vascular Adhesion Protein-1 (VAP-1), is an adhesion molecule with semicarbazide-sensitive amine oxidase activity (SSAO), which is also expressed as a soluble protein in serum (sVAP-1) and elevated in inflammatory liver diseases such as NAFLD. VAP-1 has been shown to modulate glucose and lipid uptake in muscle and adipose tissue and thus we investigated whether it may contribute to glucose and lipid homeostasis in human liver tissue.

Methods We have used precision cut liver slices (PCLS) from normal and diseased human liver specimens and cultured human sinusoidal endothelium (HSEC) and hepatocyte cells in combination with VAP-1 substrates (200 μ M methylamine or benzylamine) and inhibitors (400 μ M bromoethylamine) to perform standard ex vivo radiolabelled glucose uptake and fatty acid uptake assays using oil red O quantification following exposure of cells to Oleic and Palmitic acid (PA). Immunohistochemical staining and qPCR were performed using standard techniques and for confirmatory experiments HSEC were transfected with enzymatically active/inactive VAP1.

Results QPCR confirmed upregulation of VAP-1 mRNA (DDCT=1.144 $p=0.03$) in NASH vs normal liver and also changes in FABP1, -4, -5, FATP3, -4 ($p\leq 0.05$ for all) and GLUT-1, 2, 3, 5, 8, 9 and 12 in NAFLD compared to normal individuals. Results were confirmed using immunohistochemical staining. Exposure of human PCLS to sVAP-1 and methylamine typically resulted in a 38%–54% increase in PA uptake ($p\leq 0.01$ for all) and a 20% increase in hepatocyte glucose uptake in vitro which could be inhibited using bromoethylamine. Transduction of HSEC with enzymatically active VAP-1 also increased glucose uptake which was prevented in the absence of enzyme activity. Interestingly methylamine treatment of human liver resulted in decreased expression of mRNA for glucose transporters and an increase in some lipid transporters including FABP6, FATP and LRP8, and H_2O_2 produced by SSAO activity increase lipid uptake by hepatic cells.

Conclusion In conclusion, we demonstrate for the first time global alterations in cellular expression of glucose and lipid transporter proteins in human NAFLD. We confirm that VAP-1 is elevated in disease and that SSAO activity of VAP-1 results in enhanced hepatic lipid and glucose uptake and changes in transporter expression. Thus we propose that bioactive metabolites of SSAO activity contribute to the metabolic derangement evident in fatty liver disease.

Competing interests None declared.

Nutrition screening

PMO-034 COMPLIANCE WITH THE MUST SCREENING TOOL FOR MEDICAL IN PATIENTS

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Introduction The National Institute for Health and Clinical Excellence (NICE) recommends that screening tools such as the five step MUST (Malnutrition universal screening tool) be used on patients admitted to hospital and weekly thereafter.¹ Early identification of nutritionally deficient patients is vital so that nutritional intervention can be targeted.

Methods All patients (n=80) on four general medical wards were reviewed and followed up for 4 weeks or until discharged. Medical

and nursing notes were assessed to see if MUST scoring was used and if the appropriate intervention was carried out based on the MUST score. The trust policy is that 100% compliance should be achieved in the use of MUST for inpatients.

Results The Abstract PMO-034 table 1 shows that compliance with the nutritional screening tool is below the expected standard of 100% and slowly reduces over the first 4 weeks from admission. There were 14 instances of MUST score 1 but this resulted in only 36% of patients being given a high energy diet and 57% of patients being placed on a food diary. There were 28 instances of MUST score 2–3, but this led to only 46% of patients being placed on a high energy diet and 68% of patients being placed on a food chart. There were six instances of MUST score 4–6, however this led to only 50% of patients on a high energy diet, 67% of patients being placed on a food chart although 100% of these patients were referred to a dietician.

Abstract PMO-034 Table 1

	Week 1	Week 2	Week 3	Week 4
Height recorded	95%			
Weight recorded	94%	85%	85%	83%
BMI recorded	88%	89%	82%	82%
Acute disease score recorded	82%	83%	77%	81%
MUST score recorded	87%	89%	85%	84%

Conclusion The adherence to nutritional scoring in medical patients is high but below the expected 100%. As time goes by the adherence to weekly screening drops slowly. Although there is a relatively high adherence to working out the MUST score, the final step in the screening tool which concentrates on nutritional intervention is disappointingly low. Continued education for both medical and nursing staff is needed so that targeted nutritional intervention can be delivered more effectively.

Competing interests None declared.

REFERENCE

1. NICE. *Clinical Guidance 32. Nutrition Support in Adults*. 2006

PMO-035 WEIGH OFF THE MARK: AN AUDIT ON THE ACCURACY OF SCALES IN AN ACUTE HOSPITAL

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Introduction Weight is a vital component of a patient's medical information which is used in a number of assessments such as the Malnutrition Universal Screening Tool (MUST), calculating drug dosages and monitoring medical treatments. The purpose of this audit was to determine the accuracy of hospital weighing scales in accordance with the UK Weighing Federation, and investigate the impact of inaccurate weights on medical assessments.

Methods Newly calibrated scales were used to obtain a reference weight for four subjects with a range of weights: subject A 31.8 kg, subject B 54.6 kg, subject C 60.8kg and subject D 106.7 kg. The subjects were then weighed on all functioning hoist, chair and standing (class 3) weighing scales within the Conquest Hospital, a medium size district general hospital. The collected weights were compared to the reference weight, and then the differences compared to error allowance specified by the UK Weighing Federation for Class III scales.

Results A total of 33 scales were included in the study including one set of standing scales which produced an excessive inaccuracy. Good