colchicine use in our study, suggesting that colchicine's systemic, rather than local, anti-inflammatory effects may be more consequential in ameliorating AT metabolic pathways in MetS. Further studies are warranted to elucidate the biological mechanisms underlying colchicine's effects in AT, as these investigations could potentially shed light on treatments to improve metabolic outcomes in human obesity.

Adipose Tissue, Appetite, and Obesity

INTEGRATED PHYSIOLOGY OF OBESITY AND METABOLIC DISEASE

Efficacy and Safety of Once-Weekly Subcutaneous Semaglutide 2.4 MG in Adults With Overweight or Obesity (STEP 1)

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Background: Despite the increasing global adverse health impact of obesity, there are few pharmacological options for effective weight management. STEP 1 investigated the efficacy and safety of the glucagon-like peptide-1 analogue, subcutaneous (s.c.) semaglutide, for weight management in adults with overweight or obesity.

Methods: This randomized, double-blind, placebo-controlled, phase 3 trial was conducted at 129 sites across 16 countries (NCT03548935). Adults aged ≥18 years with either body mass index (BMI) ≥30 kg/m^2 or BMI ≥27 kg/m^2 with ≥1 weight-related comorbidity, without type 2 diabetes, were randomized 2:1 to 68 weeks' treatment with once-weekly s.c. semaglutide 2.4 mg or placebo, both as adjunct to lifestyle intervention. The co-primary endpoints were percentage change in body weight and achievement of weight loss ≥5%. Cardiometabolic risk factors, patient-reported outcomes, and safety/tolerability were also assessed. Two estimands were defined: treatment policy (effect regardless of treatment adherence and use of rescue intervention) and trial product (effect assuming treatment adherence and without rescue intervention); results are presented for the treatment policy estimand, unless stated otherwise. P values for parameters marked with # were not controlled for multiplicity.

Results: 1961 randomized participants (mean age 46 years, body weight 105.3 kg, BMI 37.9 kg/m^2; 74.1% female) were included. Mean body weight change from baseline to week 68 was −14.9% in the semaglutide group vs −2.4% with placebo (estimated treatment difference [ETD]: −12.4%; 95% confidence interval (CI): −13.4, −11.5; p<0.0001). Similar results were obtained with the trial product estimand: mean body weight change# was -16.9% for semaglutide vs -2.4% for placebo (ETD: -14.4%; 95% CI: -15.3, -13.6; p<0.0001). Participants were more likely to achieve weight loss ≥5%, ≥10%, ≥15%, and ≥20%# with semaglutide vs placebo (86.4% vs 31.5%, 69.1% vs 12.0%, 50.5% vs 4.9%, and 32.0% vs 1.7%, respectively; p<0.0001 for all). Greater improvements were seen with semaglutide vs placebo in waist circumference, BMI#, systolic and diastolic# blood pressure, glycated hemoglobin#, fasting plasma glucose#, C-reactive protein#, fasting lipid profile#, and self-reported physical functioning (p<0.05 for all). No new safety signals with semaglutide were observed. The most frequent adverse events with semaglutide were gastrointestinal disorders (typically transient and mild-to-moderate).

Conclusion: In adults with overweight or obesity, once-weekly s.c. semaglutide 2.4 mg plus lifestyle intervention induced a mean weight loss of approximately 15% by week 68. Clinically beneficial weight loss of ≥10% was achieved by over two-thirds of participants and ≥20% by one-third of participants, along with associated improvements in cardiometabolic risk factors and physical functioning.

Adipose Tissue, Appetite, and Obesity

INTEGRATED PHYSIOLOGY OF OBESITY AND METABOLIC DISEASE

Efficacy and Safety of Semaglutide 2.4 MG Once-Weekly in Adults With Overweight or Obesity and Type 2 Diabetes (STEP 2)

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Background: In people with overweight/obesity and type 2 diabetes (T2D), achievement of weight loss can be a challenge. STEP 2 investigated the efficacy and safety of semaglutide 2.4 mg for weight management in adults with overweight/obesity and T2D.
Methods: This randomized, double-blind, double-dummy, placebo-controlled, phase 3 trial was conducted at 149 sites across 12 countries (NCT03552757). Adults aged ≥18 years with body mass index (BMI) ≥27 kg/m^2, T2D, HbA_{1c} between 7–10% (53–86 mmol/mol), and receiving ≤3 oral glucose-lowering agents were randomized 1:1:1 to once-weekly subcutaneous (s.c.) semaglutide 2.4 mg or 1.0 mg, or placebo, as adjunct to a reduced-calorie diet and increased physical activity for 68 weeks. The co-primary endpoints were percentage change in body weight and proportion of participants achieving weight loss ≥5% for semaglutide 2.4 mg vs placebo. Cardiovascular risk factors, glycemia and safety/tolerability were also assessed. Two estimands were defined: treatment policy and trial product; results are presented for the treatment policy estimand, unless stated otherwise.
Results: 1,210 participants (mean: age 55 years, body weight 99.8 kg, BMI 35.7 kg/m^2, HbA_{1c} 8.1%, diabetes duration 8.0 years; 50.9% female) were randomized. Mean body weight change from baseline to week 68 was −9.6% with semaglutide 2.4 mg vs −3.4% with placebo (estimated treatment difference [ETD]: −6.2%; 95% confidence interval [CI]: −7.3, −5.2; p<0.0001) and −7.0% for semaglutide 1.0 mg (ETD for semaglutide 2.4 mg vs 1.0 mg: −2.7%; 95% CI: −3.7, −1.6; p<0.0001). Similar results were obtained with the trial product estimand: mean body weight change −10.6% for semaglutide 2.4 mg vs −3.1% for placebo (ETD: −7.6%; 95% CI: −8.6, −6.6; p<0.0001) and 7.6% for semaglutide 1.0 mg (ETD vs semaglutide 2.4 mg: −3.1%; 95% CI: −4.1, −2.1; p<0.0001). Participants on semaglutide 2.4 mg were more likely to achieve weight loss ≥5%, ≥10%, ≥15% and ≥20% vs placebo (68.8% vs 28.5%, 45.6% vs 8.2%, 25.8% vs 3.2% and 13.1% vs 1.6%, respectively; p value for odds ratios <0.0001 for all). Mean change in HbA_{1c} from baseline to week 68 was −1.6% for semaglutide 2.4 mg vs −0.4% for placebo (p<0.0001). Greater improvements with semaglutide 2.4 mg vs placebo were also seen in waist circumference, BMI, systolic blood pressure, fasting plasma glucose, C-reactive protein, and lipids (HDL, VLDL, free fatty acids, and triglycerides) (p<0.05 for all). The most frequent adverse events were gastrointestinal disorders (typically transient and mild-to-moderate), occurring in 57.5%, 63.5% and 34.3% of participants receiving semaglutide 1.0 mg, 2.4 mg and placebo, respectively.
Conclusion: Semaglutide 2.4 mg, as adjunct to lifestyle intervention, was efficacious and well tolerated for weight management in adults with overweight or obesity and T2D, providing significantly greater weight loss vs placebo and semaglutide 1.0 mg at week 68.

Adipose Tissue, Appetite, and Obesity

INTEGRATED PHYSIOLOGY OF OBESITY AND METABOLIC DISEASE

Endocrine and Metabolic Comorbidities in Hospitalized Psoriasis Patients in the United States

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Introduction: Psoriasis is a chronic immune-mediated, genetic disease manifesting in the skin or joints or both. Studies have shown an association between psoriasis and metabolic syndrome [1]. However, there is a scarcity of studies on metabolic and endocrine co-morbidities of hospitalized psoriasis patients. This study aims to compare the prevalence of metabolic and endocrine co-morbidities in hospitalized psoriasis patients to hospitalized non-psoriasis patients.
Methods: Data were abstracted from the National Inpatient Sample (NIS) 2016 and 2017 Database. NIS is the largest inpatient hospitalization database in the United States. The NIS was searched for hospitalizations for adult patients aged 18 years or above with a principal or secondary diagnosis of psoriasis and those without any diagnosis of psoriasis. Chi-square test was used to compare the prevalence of common metabolic and endocrine comorbidities between psoriasis and non-psoriasis hospitalized patients. Co-morbidities were obtained from secondary diagnoses. We used ICD-10 codes to obtain psoriasis hospitalizations and co-morbidities. STATA, version 16 was used for analysis.
Results: There were over 71 million discharges in the combined 2016 and 2017 NIS database. Out of this, 323,405 hospitalizations had a diagnosis of psoriasis. Psoriasis hospitalizations had a higher prevalence of dyslipidemia (41.8% vs 31.8%, p<0.0001), hypothyroidism (15.6% vs 12.0%, p<0.0001), hyperthyroidism (0.6% vs 0.5%, p=0.0133), type 2 diabetes mellitus (31.1% vs 24.5%, p<0.0001), obesity (24.4% vs 14.3%, p<0.0001), Non-alcoholic fatty liver disease (0.9% vs 0.3%, p<0.0001) and similar prevalence of type 1 diabetes mellitus (0.9% vs 0.9%, p=0.1567) compared to non-psoriasis hospitalizations.
Conclusion: Hospitalized psoriasis patients have a higher prevalence of dyslipidemia, hypothyroidism, hyperthyroidism, type 2 diabetes mellitus, obesity and non-alcoholic fatty liver disease compared to non-psoriasis hospitalized patients. Endocrinology consultation during hospitalization will be helpful in managing these comorbidities in psoriasis patients.

References

1. Gisondi P, Fostini AC, Fossà I, Girolomoni G, Targher G. Psoriasis and the metabolic syndrome. *Clin Dermatol*. 2018;36(1):21–28. doi:10.1016/j.clindermatol.2017.09.005