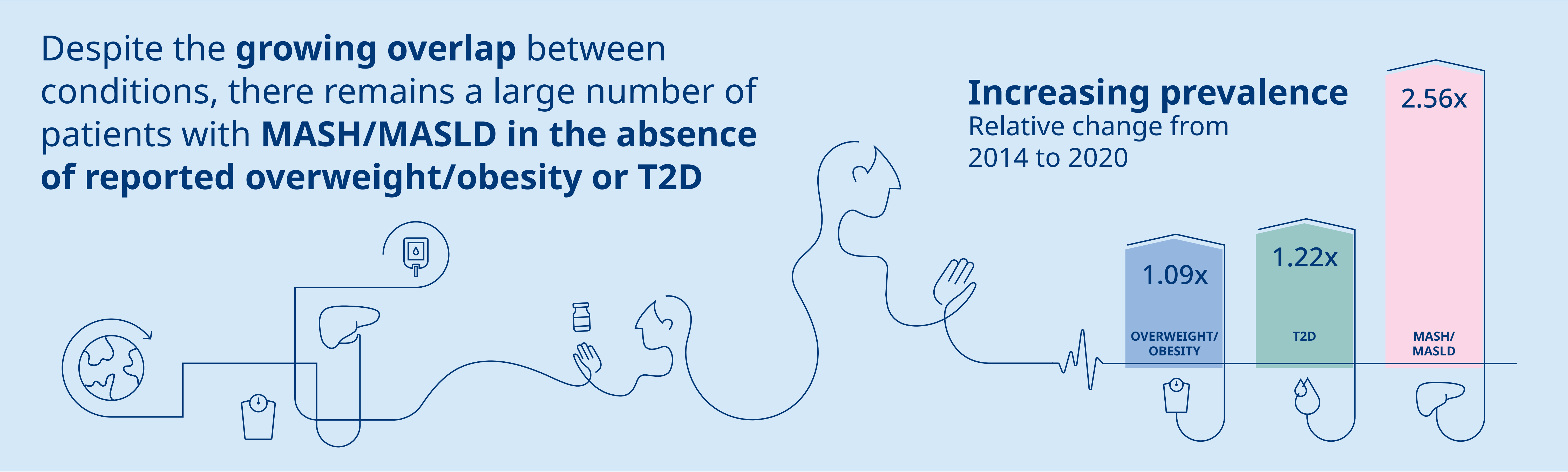


Prevalence and overlap of overweight/obesity, type 2 diabetes and metabolic dysfunction-associated liver disease in England: a Clinical Practice Research Datalink study

EPH188

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Aim

- Metabolic dysfunction-associated steatotic liver disease (MASLD) is a leading cause of liver disease and liver-related mortality, and is closely linked with cardiometabolic risk factors including obesity and type 2 diabetes (T2D)¹
- Obesity and T2D represent the strongest predictors for the development and progression of MASLD to more severe forms, including metabolic dysfunction-associated steatohepatitis (MASH)^{2,3}
- This study aimed to explore the prevalence and multimorbidity overlap of overweight/obesity, T2D, and MASH/MASLD in real-world clinical practice in England

Methods

- Data from adults aged ≥18 years were extracted from the Clinical Practice Research Datalink (CPRD) Aurum primary care database with linkage to Hospital Episode Statistics (HES) and to Office of National Statistics (ONS) mortality data
- Eligible patients had ≥365 days of registration data, sufficient linkage quality as determined by CPRD, a recorded sex, and at least one record of any of the following: obesity, T2D, or MASH (from CPRD and HES), or body mass index (BMI), height and weight, or test for MASH (from CPRD)
- Data were extracted at yearly intervals between 01 January 2014 and 01 January 2020 (due to the COVID-19 pandemic), producing seven index dates
- The prevalence of overweight/obesity (BMI ≥27 kg/m²), T2D, and MASH/MASLD was calculated annually, and the overlap between conditions was evaluated

Limitations

- The CPRD database is considered broadly representative of UK clinical practice and comprises approximately 16 million patients. For this study, only patients matching the specified criteria were obtained, reducing the cohort to approximately 12.5 million
- Due to limitations in the completeness and accuracy of coding and under diagnosis of MASH/MASLD in routine clinical practice, the prevalence of MASH/MASLD and obesity observed in this study is likely to underestimate the true prevalence in the UK

Key results

- Of the full cohort of 12.5 million, a total of 9,373,835 to 10,782,480 people were eligible for analysis each year from 2014 to 2020, respectively
- In 2020, patients had a mean age of 53.7 years, 58.9% were female, and the majority were of White ethnicity (80.5%). Mean BMI was 27.1 kg/m² and mean HbA_{1c} was 6.43% (Table 1)
- The overall prevalence of each condition increased annually between 2014 and 2020, where the proportion of patients with overweight/obesity increased from 40.4% to 44.4%, T2D from 6.5% to 7.9% and MASH/ MASLD from 0.7% to 1.7% (Figure 1)
- The proportion of people with overlapping overweight/obesity, T2D and MASH/MASLD more than doubled, from 0.15% in 2014 to 0.40% in 2020 (Figure 1)
- Of those with MASH/MASLD, ~75% also had overweight/ obesity, while the proportion with MASH/MASLD alone (lean MASH/MASLD) decreased from 21.2% in 2014 to 19.3% in 2020 (Figure 1)
- While the absolute number of patients with MASH/ MASLD was relatively low, its prevalence increased at a comparably greater rate than that of overweight/obesity or T2D, with a relative change of 2.56 between 2014 and 2020 (compared to a relative change of 1.09 and 1.22 for overweight/ obesity and T2D, respectively) (Figure 1)
- Between 2014 and 2020, the overlapping prevalence of MASH/MASLD and overweight/obesity increased from 0.35% to 0.92%, while that between MASH/MASLD and T2D increased from 0.03% to 0.08%, and the overlap between T2D and overweight/obesity increased from 4.37% to 5.15% (Table 2)

