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Associations between diabesity and mortality over 7 years: a Maltese population-level case study

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Introduction: Diabesity presents a growing global epidemic. Demographic and socioeconomic associations have been documented, yet, the literature on mortality risk associated with diabesity is scarce. The aim of this study was to assess whether diabetes and/or diabesity increas the risk of all-cause mortality across a period of 7 years at a population level.

Methods: A nation-wide health examination survey in Malta was conducted between 2014 and 2016. This collected sociodemographic information, bio-anthropometric measurements (waist circumference, body mass index [BMI], body adiposity index [BAI]) and blood samples. Mortality information was acquired in 2021 by cross-referencing with the national mortality register. Statistical analysis was conducted using chi-square tests and Cox proportional hazard models.

Results: A mortality rate of 1.67% was observed ($n = 3947$), with diabetes and obesity being responsible for 6.06% and 3.03% of deaths, respectively. Examining the deceased individuals alongside their baseline characteristics (2014-2015) revealed that 25.76% (CI95%: 16.75 - 37.44) had diabetes, and 30.30% (CI95%: 20.55 - 42.22) were obese. Diabetes was associated with significant mortality risk (HR: 2.65 CI95%: 1.20 - 5.85; $p = 0.02$), while diabesity showed borderline significance ($p = 0.06$). After adjustment for potential confounding factors the mortality risk linked to diabetes remained significant and BAI was the only anthropometric measurement positively associated with mortality.

Conclusions: These findings emphasise the urgency for comprehensive public health policies targeting the concurrent prevention and management of diabetes and obesity at a population level. Our results also indicate that incorporating body adiposity index (BAI) into risk assessment protocols may provide valuable insights into mortality risk prediction and inform tailored interventions.

Key messages:

- Diabetes and a high BAI score were significantly associated with mortality in the Maltese population, while diabesity had moderate significance, emphasising the urgency of tackling this epidemic.
- These findings call for broad health policies to address diabesity at a population level and suggest integrating BAI into risk assessment for better mortality prediction and tailored interventions.