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**Influence of body mass index on proteinuria progression in diabetic patients: A retrospective analysis**

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**Background:** Proteinuria, a key marker of kidney dysfunction in diabetic patients, is influenced by different factors, including Body Mass Index (BMI).

**Objective:** To determine the influence of BMI in the development, resolution, and persistence of proteinuria in diabetic patients over three years (from 2021 to 2023).

**Methods:** A retrospective cohort study was conducted on 674 diabetic patients attending Diabetic Centre, Teaching Hospital, Jaffna, who were free of proteinuria in 2021 and monitored for proteinuria progression till 2023. Patients were categorized into four groups based on their proteinuria status in 2023; 'No proteinuria', 'Persistent proteinuria', 'Resolved proteinuria', and 'Newly developed proteinuria'. BMI values were measured in years 2021, 2022, and 2023, while the mean values of years 2021 and 2023 were compared (paired samples t-test).

**Results:** The 'No proteinuria' group (n=564) exhibited a significant ( $p<0.001$ ) reduction in mean BMI, from  $25.89 (\pm 3.87)$  kg/m<sup>2</sup> in 2021 to  $24.64 (\pm 3.54)$  kg/m<sup>2</sup> in 2023. Those with 'Resolved proteinuria' (n=8) had a significant ( $p=0.400$ ) reduction in BMI, [from  $23.35 (\pm 2.93)$  kg/m<sup>2</sup> in 2021 to  $22.71 (\pm 3.08)$  kg/m<sup>2</sup> in 2023] highlighting the potential role of weight management in the initial stages to prevent and reverse proteinuria. The 'Persistent proteinuria' group (n=33) maintained stable BMI levels, with no significant ( $p=0.967$ ) change in BMI [ $24.54 (\pm 3.85)$  kg/m<sup>2</sup> (2021) and  $24.53 (\pm 4.27)$  kg/m<sup>2</sup> (2023)]. Conversely, the 'Newly developed proteinuria' group (n=69) had non-significant ( $p=0.117$ ) increase in BMI [from  $25.21 (\pm 3.39)$  kg/m<sup>2</sup> in 2021 to  $25.55 (\pm 3.59)$  kg/m<sup>2</sup> in 2023].

**Conclusions:** Diabetic patients who remained proteinuria-free or resolved proteinuria showed significant BMI reduction, suggesting that the weight management may aid prevention and reversal. Further interventional studies on weight reduction and require longer follow-up to confirm the role of BMI in proteinuria progression.