Correlation of C-Peptide with Duration of Type 2 Diabetes

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Background & Aim:

- C-peptide is a key biomarker of endogenous insulin secretion, reflecting pancreatic beta-cell reserve.
- With longer duration of Type 2 Diabetes Mellitus (T2DM), beta-cell function declines.
- This study explores the relationship between C-peptide and disease duration to guide individualized therapy.

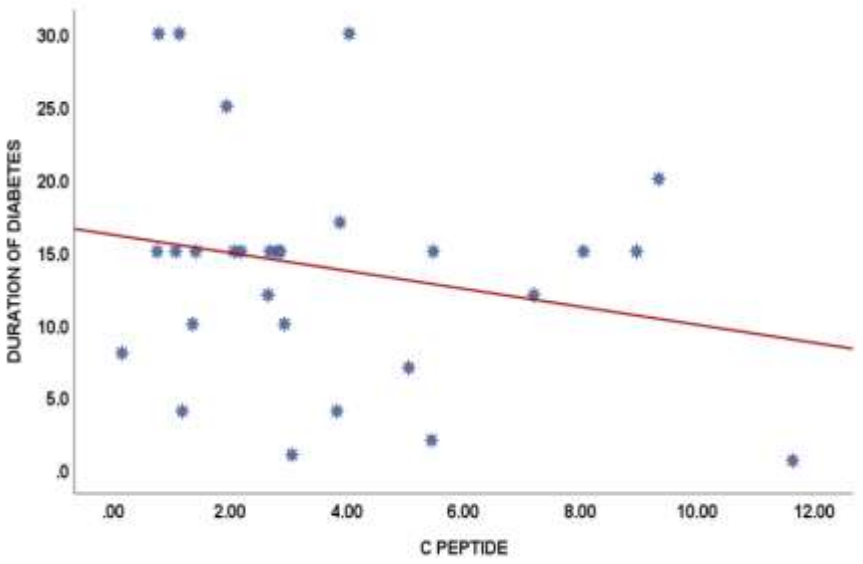
Methods & Materials:

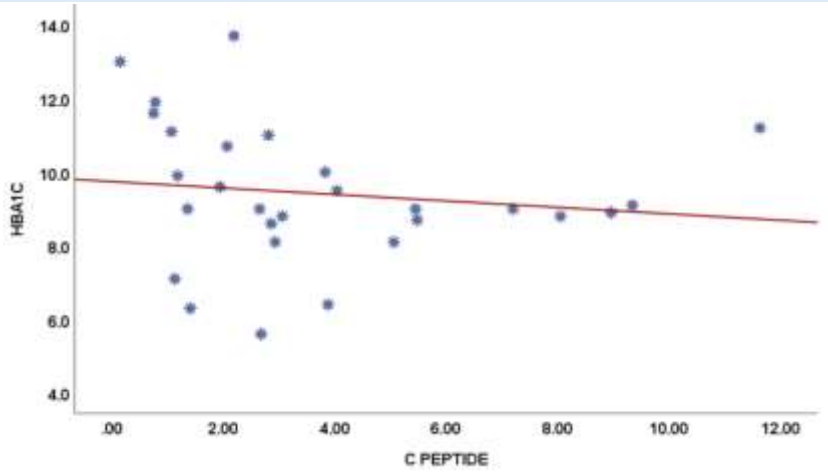
- Cross-sectional study conducted among 28 adults with T2DM.
- Parameters included random C-peptide, duration of diabetes, HbA1c and serum creatinine.
- Spearman rank correlation analysis was used to determine associations.

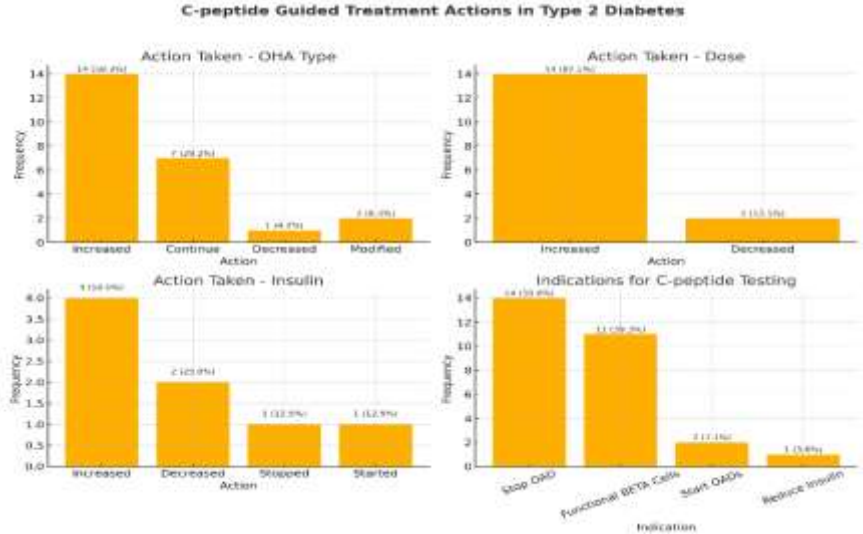
Results:

- Mean+/-SD
  - Age: 59.5 ± 11.2 years
  - Duration: 13.8 ± 8.2 years
  - C-peptide: 3.71 ± 2.95 ng/mL
  - HbA1c: 9.42 ± 1.91%
- Correlation
  - C-peptide vs Duration: r = -0.176, p = 0.37
  - C-peptide vs HbA1c: r = -0.314, p = 0.104

Both demonstrated negative correlations, indicating a trend toward progressive beta-cell decline with longer disease duration.







Conclusion: C-peptide levels showed an inverse relationship with diabetes duration and glycemic control, reflecting beta-cell exhaustion. Although not statistically significant, this trend supports using C-peptide as a practical marker for assessing beta-cell reserve and guiding personalized diabetes management strategies.