P-0783– Diabetes mellitus and frailty in Indian elderly

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Background & Aim

- People with diabetes tend to have an **accelerated aging process** that poses a **greater risk** for them to **develop frailty** at a much **younger age**.
- Our aim was to assess **elderly** individuals with and without diabetes in terms of **health, frailty and nutritional status**.

Methodology

- A **cross-sectional** community-based study was carried out on **304 free-living elderly** individuals aged ≥ 60 years residing in Delhi.
- Diabetes was **self-reported** by the elderly subjects.
- Frailty was assessed as meeting three or more of the five **Fried's phenotype criteria** (weight loss >4.5 kgs in the past year, self-reported exhaustion, low gait speed, low grip strength and low physical activity).
- The subjects were assessed for their nutritional status using the **Mini Nutritional Assessment (MNA-short)**.

Results

The prevalence of self-reported diabetes was **32.2%**.

- People with diabetes had a **higher weight, waist and hip circumferences, waist-hip ratio, waist-height ratio, FPG and HbA1C** as compared to those without diabetes, though some of these differences were not statistically significant (see table 1).
- More people with diabetes were **overweight, obese and with a poor self-health perception**.
- Frailty was found in **20.4%** of people with diabetes and 19.4 percent in people without diabetes (differences are insignificant).
- **Less number of people** with diabetes were robust/**non-frail** (5% vs. 8%).
- More people with diabetes were **dependent on others** to perform their activities of daily living (2% vs 0.9%) like bathing, feeding, dressing etc. than people without diabetes, though these differences were not statistically significant.

Table 1: Demographic, health, frailty and nutritional characteristics of people with and without diabetes

Characteristics	People with Diabetes	People without Diabetes	p value
Frequency (%)	98 (32.2)	206 (67.8)	
Age (years)(Mean $\pm$ SD)	66.4 $\pm$ 6.2	66.2 $\pm$ 5.5	p=0.7
Gender: Male (%)	51 (52.0)	99 (48.0)	p=0.5
Female (%)	47 (48.0)	107 (51.9)	p=0.5
Height (cms)(Mean $\pm$ SD)	157.9 $\pm$ 10.1	157.5 $\pm$ 9.5	p=0.5
Weight (kgs)(Mean $\pm$ SD)	68.5 $\pm$ 14.3	66.6 $\pm$ 14.8	p=0.7
WC (cms)(Mean $\pm$ SD)	97.6 $\pm$ 15.3	93.9 $\pm$ 13.5	p=0.1
HC (cms)(Mean $\pm$ SD)	101.5 $\pm$ 14.3	99.7 $\pm$ 11.1	p=0.003
WHR (Mean $\pm$ SD)	0.96 $\pm$ 0.1	0.94 $\pm$ 0.1	p=0.6
WHtR (Mean $\pm$ SD)	0.6 $\pm$ 0.1	0.5 $\pm$ 0.08	p=0.042
**Underweight ($< 18 \text{ kg/m}^2$)(%)	2 (2.0)	8 (3.9)	p=0.6
**Normal ($18 - 22.9 \text{ kg/m}^2$)(%)	16 (16.3)	40 (19.4)	p=0.6
**Overweight ($23 - 24.9 \text{ kg/m}^2$)(%)	14 (14.3)	28 (13.6)	p=0.6
**Obese ($> 25 \text{ kg/m}^2$)(%)	66 (67.3)	128 (62.1)	p=0.6
Fasting Plasma Glucose (mg/dl) (Mean $\pm$ SD)	159.2 $\pm$ 76.3	103.5 $\pm$ 29.7	p=0.000
HbA1C (%) (Mean $\pm$ SD)	8.0 $\pm$ 1.9	5.9 $\pm$ 0.8	p=0.000
Poor self-health perception (%) (n=52)	19 (19.4)	33 (16.0)	p=0.5
Eating difficulty (%)	17 (17.3)	39 (18.9)	p=0.7
Sleeping difficulty (%)	69 (70.4)	143 (69.4)	p=0.8
Experienced fall/s in the past year (%)	71 (72.4)	167 (81.0)	p=0.1
At-risk of malnutrition (%)	18 (18.4)	45 (21.8)	p=0.7
Malnourished (%)	1 (1.0)	3 (1.5)	p=0.7
Weight loss >4.5 kgs in the past year (%)	17 (17.3)	37 (17.9)	p=0.8
Exhaustion (%)	23 (23.5)	44 (21.4)	p=0.6
Slowness (%)	26 (26.5)	61 (29.6)	p=0.5
Low grip strength (%)	24 (24.5)	40 (19.4)	p=0.3
Low physical activity (%)	79 (80.6)	158 (76.7)	p=0.4
Non-Frail (%)	5 (5.1)	17 (8.2)	p=0.6
Pre-Frail (%)	73 (74.5)	149 (72.3)	p=0.6
Frail (%)	20 (20.4)	40 (19.4)	p=0.6
Dependent in performing ADL (%)	2 (2.0)	2 (0.9)	p=0.7

Conclusion

No significant differences found in elderly individuals with and without diabetes in terms of health, frailty and nutritional status.

**** Misra et al (2009)** revised guidelines for diagnosis of obesity based on percentage body fat and morbidity data, limits of normal BMI are narrower and lower in Asian Indians than in white Caucasians.

Abbreviations:

WC Waist Circumference

HC Hip Circumference

WHR Waist Hip Ratio

WHtR Waist to Height Ratio

MNA Mini Nutritional Assessment

ADL Activities of Daily Living HbA1C Glycosylated Haemoglobin