

Nephropathy	BMI		Total	χ^2	p-value
	≥ 27	< 27			
	(Case)	(Control)			
	%	%			
Yes	19.5	8	27.5	13.266	0
No	30.5	42	72.5		
Total	50	50	100		

TABLE 2
Association between diabetic foot and BMI

Table 2 indicates that 18% obese (case) and 5.5% non-obese (control) have diabetic foot and rest of the patients have no diabetic foot. Association between diabetic foot and BMI is statistically significant ($p < 0.05$)

Diabetic foot	BMI		Total	χ^2	p-value
	≥ 27	< 27			
	(Case)	(Control)			
	%	%			
Yes	18	5.5	23.5	17.383	0
No	32	44.5	76.5		
Total	50	50	100		

TABLE 3
Association between retinopathy and BMI

Table 3 reveals that 27% obese (case) and 7% non-obese (control) have retinopathy and rest of the patients have no retinopathy. Association between retinopathy and BMI is statistically significant ($p < 0.05$)

Retinopathy	BMI		Total	χ^2	p-value
	≥ 27	< 27			
	(Case)	(Control)			
	%	%			
Yes	27	7	30	35.651	0
No	23	43	70		
Total	50	50	100		

DISCUSSION

Overweight and obesity continue to increase substantially worldwide, affecting all ages, sexes and races. Worldwide about 58% of diabetes mellitus and 21% of ischemic heart disease are attributable to BMI above 21 kg/m² [5]. In a study that examined ethnic differences in the strength of association between BMI and hypertension, higher

prevalence of hypertension was associated with higher BMI levels in different ethnic group [6]. Significant associations between BMI and BP have also been documented in lean Chinese populations [7]. In a prospective cohort, increasing BMI was associated with a steady increase in the risks of total, ischemic, and hemorrhagic stroke. Although concomitant hypertension and diabetes accounted for much of the increase in total and ischemic stroke, a significant increase remained after adjustment for these potential biological mediators. Although the risk of ischemic stroke was highest among smokers and individuals with hypertension, these factors did not substantially modify the relationship between BMI and stroke. Body mass index was not associated with the severity of total and ischemic stroke, but the data suggest that it might be inversely associated with severity of fatal hemorrhagic stroke, particularly subarachnoid hemorrhage. The association between excess weight and stroke risk has been controversial. Among men, few prospective studies have investigated this relationship. Some of these had small sample sizes [8] and others did not classify stroke subtypes to my knowledge, the association between BMI and stroke severity has not been examined prospectively before. Association between stroke and BMI is statistically significant in this study. Individuals with diabetes mellitus are 17 times more likely to have an amputation as a result of peripheral vascular disease and are at an increased risk of developing nephropathy, retinopathy, and coronary heart disease, among other adverse health outcomes [10]. The present study showed similar findings. Increasing evidence suggests that obesity is a risk factor for diabetes and chronic kidney diseases. As a marker of obesity, high body mass index has been reported to be related with diabetic nephropathy and end-stage renal disease [11].

CONCLUSION

Chance of suffering from nephropathy, retinopathy and diabetic foot was higher among obese diabetic patients.

REFERENCE

- Laskar SI Urbanization in Bangladesh: Some contemporary observations. *Bangladesh Dev Stud.*1996; 24(12): 207-16.
- Sayeed MA, Mahtab H, Khanum PA, et al. Diabetes and Impaired fasting glycaemia in rural population of Bangladesh. *Diabetes Care.* 2003; 26(4): 1034-39.
- Hussain A, Rahim MA, Azad Khan AK et al.Type 2 diabetes in rural and urban population: Diverse prevalence and associated risk factors in Bangladesh. *Diabetes Med.* 2005; 22(7): 931-37.
- Ramachandran A, Snehalatha C, Latha E, et al.Impacts of urbanization on life style and on the prevalence of diabetes in native Asian Indian population. *Diabet Res Clin Pract.* 1999; 44(3):207-13.
- World Health Organization. *World Health Report 2002: Reducing risks, Promoting Healthy Life.* World Health Organization: Geneva, 2002.
- Colin AB, Linda SA, Popkin BM. Ethnic differences in the association between body mass index and hypertension. *Am J Epidemiol* 2002; 155(4): 346-53.
- Hu FB, Wang B, Chen C et al. Body mass index and cardiovascular risk factors in a rural Chinese population. *Am J Epidemiology* 2000; 151(1): 88-97. Abbott RD, Behrens GR, Sharp DS et al. Body mass index and thromboembolic stroke in nonsmoking men in older middle age: the Honolulu Heart Program. *Stroke.* 1994; 25(12):370- 76.
- Rhoads G, Kagan A. The relation of coronary disease, stroke, and mortality to weight in youth and in middle age. *Lancet.* 1983; 492- 95.

9. Gray N et al. Relation between BMI and Diabetes Mellitus and Its Complications among US Older Adults. *South Med J.* 2015; 108 (1):29-36.
10. Hsu CY, McCulloch CE, Iribarren C, et al. Body mass index and risk for end-stage renal disease. *Ann Intern Med* 2006, 144(1):21-28.