VARIOUS POTENTIAL DISEASE CONDITIONS ASSOCIATED WITH MEDICATION AND VARIOUS SYMPTOMS RELATED WITH DIABETIC PATIENTS IN BANGLADESH.

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AIM: In recent era diabetes became most prevalent metabolic condition worldwide. Objectives of this study was determined the impact of different other risk factors on liver disease and associated diabetes with physical activities, awareness, medications, various symptoms among diabetics patients. **METHODS:** It is a cross sectional observational study that was attempted to find out for the treatment of diabetes and to determine the impact of different other risk factors associated with diabetes. In this study, purposive sampling technique was followed and sample size was 115. Then data were entered into computer and results were calculated with the help of Microsoft Excel. **RESULTS:** In this investigation, we found that a total of 115 patients among them 71.03% were female and 60.95% were male. In the study, 78.94% university male and illiterate (82.35%) female were suffering from diabetics. Male patients (61.53%) and 52.3% female received irregular treatment. Among all diabetic patients 63.46% male and 36.53% female were stressful condition in their life time. All patients demonstrate significant several symptoms including weakness, vomiting, frequent urination, loss of appetite, weight loss, head spinning, nausea, headache, micturition, thirst, skin disease, non-respondents etc due to longer time use of medications. Significant percentage of diabetic's patients unaware regards physical activities. Among them patient exposure to various conditions like as 11.55% blood transfusion, 8.04% injecting drug use, 46.23% dental treatment, 24.62% surgery, 2.51% jaundice, 31.15% none. Diabetic patients take different group of medicines like as oral: 44.66% male and 55.335% female; insulin: 39.13% male and 60.86% female; combination: 45.45% male and 54.54% female respectively. Patients performing some exercise to reduce glucose level in body to control diabetic. Genetically diabetes increased globally. **CONCLUSION:** In this investigation, demonstrate that patients have no concern regard treatment management, medication and future diseases related to diabetic. Further studies are required to improve awareness, treatment management of diabetic diseases among all population to reduce diabetic patients and other related diseases in future.

THEORETICAL BACKGROUND

The liver is the vital organ to maintain normal blood glucose concentration in postprandial as well as the fasting states. Glycogenolysis and hepatic glucose production enhances due to Loss of insulin effect on the liver. Deformity of triglyceride storage as well as lipolysis in insulin-sensitive tissue such as the liver are an early manifestation of conditions characterized by insulin resistance and are detectable earlier than fasting hyperglycemia. The precise Metabolic factors, environmental, genetic, and sequence of events that lead to the underlying insulin resistance, however, is not fully understood.[1] Previous animal models demonstraed, chronic hyperinsulinemia to predispose the liver to relative resistance to insulin. This is distinguishing by a failure of insulin to signal an increase in insulin receptor substrate-2. Lipogenesis also enhances due to upregulation of sterol regulatory element-binding protein 1c (SREBP-1c).[2] In spite of up-regulation of SREBP-1c and subsequent simulation of de novo lipogenesis in the liver leads to increased intracellular availability of triglycerides, promoting fatty liver and downregulation of the insulin receptor substrate-2–mediated insulin signaling pathway in insulin-resistant states.This also increases VLDL assembly and secretion.[1] Accordingly, hyperinsulinemia might directly lead to hepatic insulin resistance with associated fatty changes.The excess in free fatty acids found in the insulin-resistant state is known to be directly toxic to hepatocytes. Putative mechanisms include toxin formation, cell membrane disruption at high concentration, Mitochondrial dysfunction, activation and inhibition of key steps in the regulation of metabolism.[3] Additional potential explanations for elevated transaminases in Insulin-resistant states include peroxisomal beta-oxidation, recruited inflammatory cells and oxidant stress from reactive lipid peroxidation. An increase in proinflammatory cytokines such as tumor necrosis factor- α (TNF- α), which may also contribute to hepatocellular injury by insulin-resistant state. In preliminary investigations, an increased frequency of specific TNF-α–promoter polymorphism was found in nonalcoholic steatohepatitis (NASH) patients, suggesting a possible genetic link or predisposition to fatty liver found in insulin-resistant states.[4] The above theories all attribute elevated transaminitis to direct hepatocyte injury. It is also hypothesized that elevation in ALT, a gluconeogenic enzyme whose gene transcription is suppressed by insulin, could indicate an impairment in insulin signaling rather than purely hepatocyte injury.[5] CLD is very prevalent in the general U.S. population and includes 2% of adult Americans (5.3 million) infected with hepatitis B or C1and an estimated 31% or more with non-alcoholic fatty liver disease (NAFLD)[6,7].The population of Americans with CLD continues to expand because of the epidemics of obesity and diabetes. In some subpopulations such as the morbidly obese, the prevalence of NAFLD is as high as 88% [8]. The association of NAFLD with concurrent diabetes increases general mortality [9]. Liver cirrhosis from alcohol abuse is another important cause of CLD [10,11]. Genetic conditions such as hemochromatosis (HC), cystic fibrosis, and sclerosing cholangitis are less frequent causes of CLD. Their prevalence is population based; for HC, the homozygous state prevalence is 0.6–1% in whites [12]. Individuals with HC have an odds ratio for diabetes as high as 5.4 compared to control subjects [13] Assessing glucose control using A1C or fructosamine (FA) testing in CLD has significant limitations. These limitations must be clearly understood to avoid misinterpretation of the results. Ordering these tests should sometimes be avoided altogether in patients with a high likelihood of falsely low results. Relationship between CLD and DiabetesThe presence of CLD is associated with significant impairment in glucose homeostasis. Glucose intolerance is seen in up to 80% of patients with CLD, and frank diabetes is present in 30–60% [14,15].

Depending on its etiology, CLD has a significant impact on hepatic glucose metabolism. One of the common causes of CLD is chronic hepatitis C. Chronic hepatitis C is accompanied by insulin resistance, which causes impaired glucose tolerance. Multiple mechanisms have been implicated, including fat accumulation in hepatocytes, increased insulin resistance secondary to increased tumor necrosis factor (TNF)-α, and direct or autoimmune damage to β-cells by the virus [16].In a previous study of 229 Japanese patients with hepatitis C (27.6% of whom had cirrhosis and 8.9% had chronic active hepatitis), 17.5% had diabetes compared to 5.3% in the control population. Their average BMI was normal at 22.4 kg/m2, and only 10% of the patients had a family history of diabetes compared to 40% of control patients with diabetes [17].

Different hepatitis C virus (HCV) genotypes seem to have different potential for interfering with glucose metabolism. In vitro studies reveal that genotype 1 and 3 HCV interfere with insulin signaling [18]. Clinically, in nonobese, nondiabetic adults infected with genotype 1 or 2 HCV, insulin resistance correlated significantly with the viral load and was independent of patients' visceral adipose tissue area as measured by abdominal computed tomography scan [19].

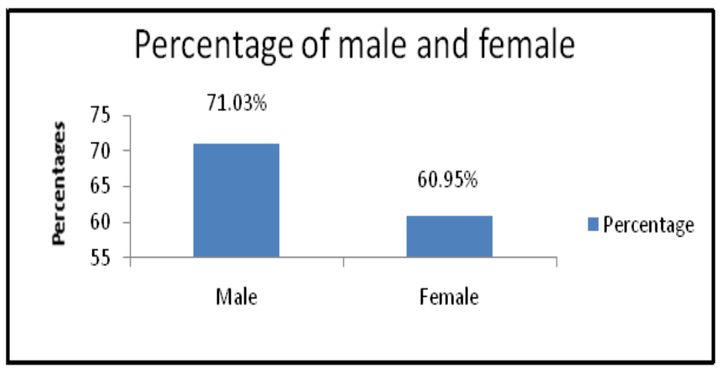
In patients with genotype 1 HCV, sustained responders to interferon-ribavirin therapy showed
a significant decrease in insulin resistance compared to the baseline insulin resistance index. Also, the incidence of overt diabetes was reported to be lower in cured patients than in nonresponders to antiviral therapy [20,21].

However, other studies did not find similar beneficial effects of long-term viral clearance [22].

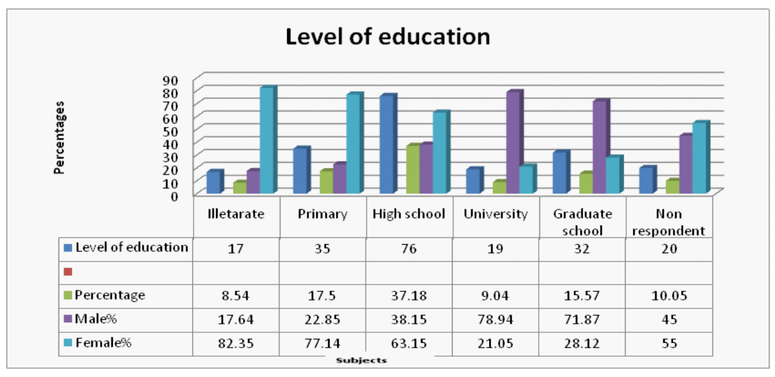
The presence of diabetes is accompanied by poor response to antiviral medications; in a recent study, only 23% of patients with both of hepatitis C and diabetes achieved sustained viral response to pegylated interferon and ribavirin combination therapy compared to 46% of patients with hepatitis C but no diabetes. Patients with concurrent diabetes also reported more side effects to therapy. In contrast, no clear relationship between insulin resistance or diabetes and infection was seen with hepatitis B virus infection [23,24,25,26]

RESULTS AND DISCUSSIONS

➢ Distribution of diabetes according to Sex

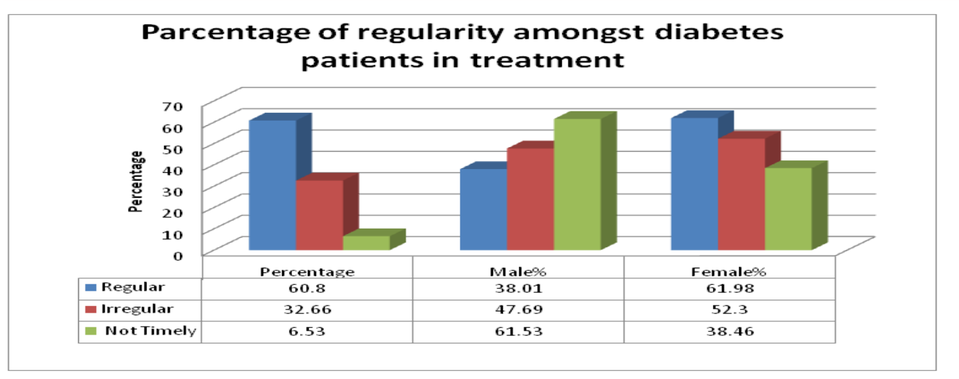


➢ Distribution of diabetes according to level of education



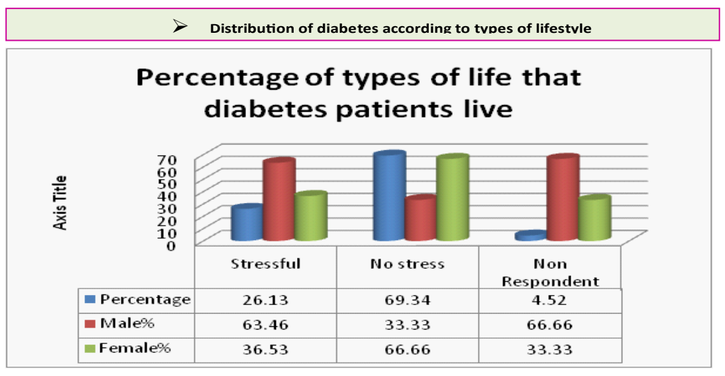
	Illeterate	Primary	High school	University	Graduate school	Non respondent
Level of education	17	35	76	19	32	20
Percentage	8.54	17.5	37.18	9.04	15.57	10.05
Male%	17.64	22.85	38.15	78.94	71.87	45
Female%	82.35	77.14	63.15	21.05	28.12	55

➢ Distribution of diabetes according to regularity of treatment



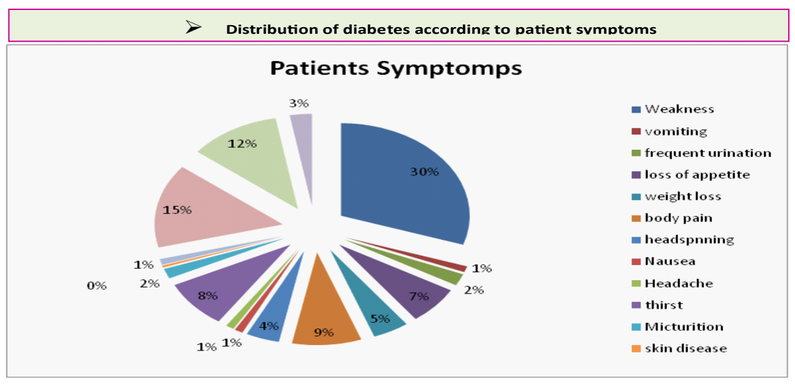
	Percentage	Male%	Female%
Regular	60.8	38.01	61.98
Irregular	32.66	47.69	52.3
Not Timely	6.53	61.53	38.46

➢ Distribution of diabetes according to types of lifestyle

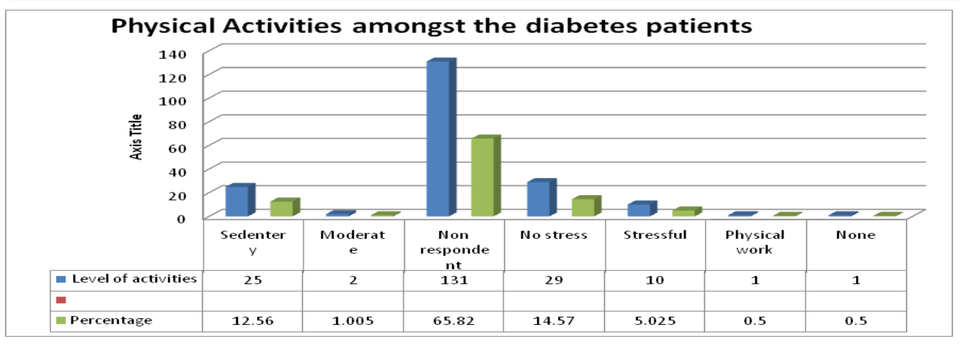


	Stressful	No stress	Non Respondent
Percentage	26.13	69.34	4.52
Male%	63.46	33.33	66.66
Female%	36.53	66.66	33.33

➢ Distribution of diabetes according to patient symptoms

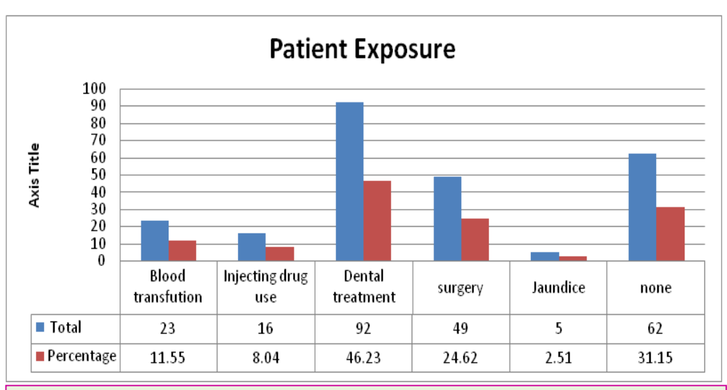


➢ Distribution of diabetes according to physical activities



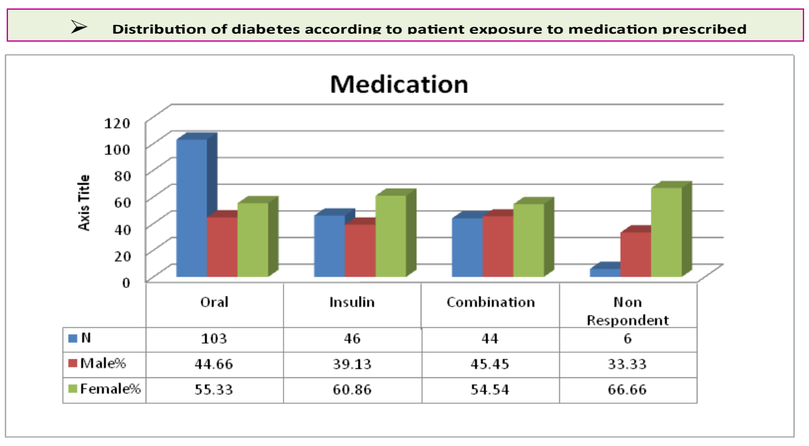
	Sedentery	Moderate	Non respondent	No stress	Stressful	Physical work	None
Level of activities	25	2	131	29	10	1	1
Percentage	12.56	1.005	65.82	14.57	5.025	0.5	0.5

➢ Distribution of diabetes according to patient exposure to various conditions



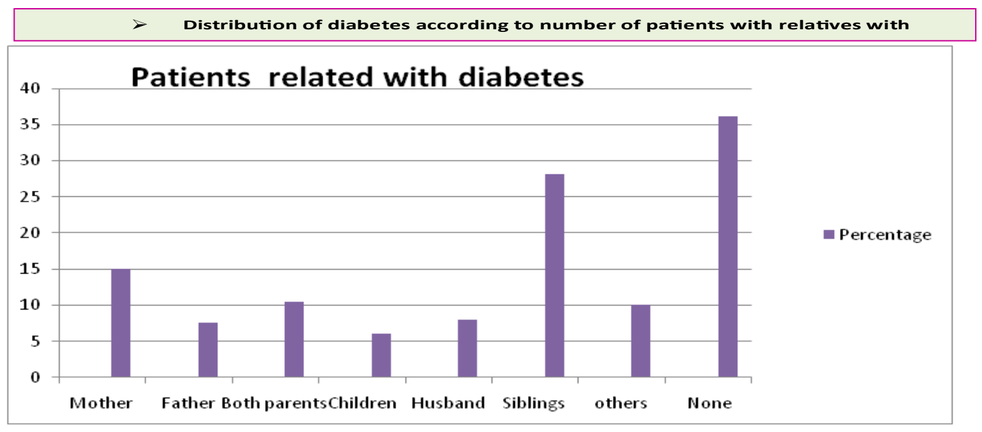
	Blood transfution	Injecting drug use	Dental treatment	surgery	Jaundice	none
Total	23	16	92	49	5	62
Percentage	11.55	8.04	46.23	24.62	2.51	31.15

➢ Distribution of diabetes according to patient exposure to medication prescribed

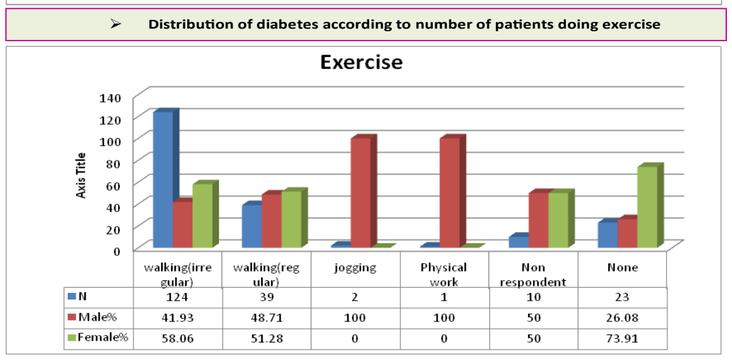


	Oral	Insulin	Combination	Non Respondent
N	103	46	44	6
Male%	44.66	39.13	45.45	33.33
Female%	55.33	60.86	54.54	66.66

➢ Distribution of diabetes according to number of patients with relatives with



➢ Distribution of diabetes according to number of patients doing exercise



	walking(irregular)	walking(regular)	jogging	Physical work	Non respondent	None
N	124	39	2	1	10	23
Male%	41.93	48.71	100	100	50	26.08
Female%	58.06	51.28	0	0	50	73.91

DISCUSSIONS

- ✓ In this investigation demonstrated that several parameters can fully and party influences conditions of diabetes.
- ✓ Patients could not concentrated their health conditions, exercise , treatment, symptoms related with other diseases etc.
- ✓ Due to lack of sufficient knowledge diabetes increasing significantly associated with other diseases.

Conclusion

- ✓ In this investigation, we concluded that diabetic patients suffer several complications during whole life.
- ✓ Most of the patients in Bangladesh are not regard diabetic treatment managements, related other diseases like as liver function abnormalities, kidney diseases, neurological diseases, eye diseases etc.
- ✓ We need to enhance publicities related diabetic treatment management, awareness and other related diseases associated with diabetics like as kidney diseases, liver diseases, neuro-pathetic disorder etc.

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Biography

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