

risk of erosive lesion of the esophageal mucosa. And 21 (31.8 %) students have symptoms of acid associated diseases. And 27 (40.9 %) of students have biliary tract disorders.

### **Conclusion**

1. About 18 % of respondents have GERD and need in EGDS and treatment.
2. 32 % of respondents have acid associated diseases and need in EGDS and treatment.
3. 41 % of respondents have biliary tract disorders and need in ultrasound of bile tract and treatment. All these students must visit the doctor and in need of treatments.

### **LITERATURE**

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## **COMPARISON OF ISCHEMIC HEART DISEASE RISK FACTORS BETWEEN BELARUS AND SRI LANKA**

### **Introduction**

Ischemic heart diseases (IHD) also known as coronary heart diseases results from unhealthy lifestyles together with contribution from genetic inheritance [1]. IHD is the major contributor to cardiac associated mortality worldwide [2]. IHD deaths in Sri Lanka reaches 22.66 % of total deaths according to the latest WHO data published in 2020. Sri Lanka ranks 106 in the world ranking of death rate from coronary heart diseases [3]. In 2020, cardiovascular diseases ranked no.1 among all causes of deaths in Belarus, killing 18,417 people (nearly 60 %) out of 31,039 [4]. There are numerous risk factors leading to IHD such as age, sex, family history, chronic diseases (diabetes, hypertension, hyperlipidemia), smoking, abusive use of alcohol, obesity and psychological factors [5].

### **Goal**

In this article we have a comparison of risk factors in a selected number of patients who are suffering from IHD in Belarus and Sri Lanka. The article aims to point out that the IHD risk factors we are focusing on are different between the two countries due to various factors such as geographical, cultural, behavioral and socioeconomical backgrounds.

### **Materials, Methodology**

Data on patients of Belarus were collected from randomly selected 30 different patients; both male and female, aged between 55–85 years, at the cardiological department of Gomel city clinical hospital no. 3 in March, 2023. Data on patients of Sri Lanka were collected from randomly selected 30 different patients; both male and female, aged between 55–85 years, from National Hospital of Sri Lanka (NHSL) annual data report of cardiovascular diseases; December, 2022. The risks we assessed among the selected patients were; age, gender, family history, smoking, alcohol, diet, hypertension, diabetes, cholesterol, chronic kidney diseases, physical activities, sleep, living condition, psychological wellbeing and BMI. Laboratory risk

factors were not taken into account. The data was then analyzed and compared to find out the differences between the two selected countries. Other statistics and data for the article were from the relevant recourses (see *References* below).

### ***Research, results and discussion***

Understanding how risk factors contribute to IHD risk is important for risk assessment and tailoring recommendations for risk factor modification;

IHD rates increase with age [5]. It is almost universal in the elderly. It's rare in childhood, except in familial hyperlipidemia. Normal aging causes the heart and blood vessels to tighten which can lead to IHD. Systolic blood pressure rises with age. Also function and mobility decreases as the heart muscles weaken. In the cardiology department of Gomel city clinical hospital no.3, there were only 3 male patients under the age of 60 who were admitted in March, 2023. Around 20 patients were between 60–85 years. In the female wards there were no patients below the age of 60. Every female patient was above 60 years. Considering data received from Sri Lanka, compared to Belarus, IHD patients between 50–60 were more significant. However even in Sri Lanka the peak ages were between 60–80 years.

Men have a higher incidence of IHD than premenopausal women. IHD develops 7–10 years later in women than in men yet is still the major cause of death in women [6]. Age as a risk factor cannot be reviewed in this study hence, we collected data from 15 male and 15 female patients equally, both from Belarus and Sri Lanka separately.

A positive family history is generally accepted to refer to those in whom a first-degree relative has developed IHD before the age of 50 years [5]. IHD is often found in several members of the same family. 16 out of 30 Belarusian patients we took data from, had a positive family history while in Sri Lankan patients it was only 22 out of 30.

In men, the risk of developing IHD is directly related to the number of cigarettes smoked. It is estimated that about 20 % of deaths from IHD in men and 17 % of deaths from IHD in women are due to smoking. Evidence suggests that each person stopping smoking will reduce his/her own risk by 25 % [5]. From the patient data we collected only men stated a history of smoking and Belarus showed higher rates of smoking than Sri Lankan IHD patients.

The relation between alcohol consumption and IHD is complex. Although regular light to moderate consumption has been linked to beneficial effects on IHD, by good epidemiologic evidence and plausible underlying pathways the impact of heavy drinking occasions is less clear. Almost every patient (10 out of 30 Belarusian patients and 8 out of 30 Sri Lankan patients, both male and female) we analyzed for this research stated that they are “Occasional alcohol consumers”. It has been really doubtful because the concept of irregular binge or heavy drinking is not uniformly defined [7].

Diet plays a major role in IHD because the diet directly affects main risk factors such as obesity, hypertension, hypercholesterolemia and diabetes mellitus. The patients we analyzed stated that they were all consuming a normal diet without any reduction of salt, fat or sugar. All Belarusian patients were meat consumers, while 7 among the 30 Sri Lankan patients were vegetarians. Belarusian patients have favorable cholesterol levels and blood pressure levels despite being more obese; patients from Sri Lanka have worse cholesterol levels despite having lower rates of obesity and abdominal obesity. Unlike in Belarus, Sri Lankans consume a lot of coconut in their daily meals in different forms such as coconut milk, coconut oil, coconut flakes. Studies have found that it contains 87 g of saturated fat in 100 g of coconut. Reduction in saturated fat intake from coconut in those living in Belarus may have contributed favorable cholesterol levels. The average total fat intake of Sri Lankans is 25 % of total energy, with 80 % of that coming from saturated fat from coconut products.

Biological risk factors such as hypertension and hypercholesterolemia account for 48 % of IHD mortality in Belarus [8]. In general, hypertension doubles the risk of IHD and accelerates

significantly the development of atherosclerosis. Only 6 out of the 30 Belarusian IHD patients and 4 out of the 30 Sri Lankan IHD patients did not have diagnosed hypertension, where the rest of the patients were diagnosed and had been receiving long term hypertensive medications for a mean time period of 10–20 years.

Diabetes mellitus (DM) is considered one of the strongest risk factors for cardiovascular disease. Patients with DM are at double the risk of IHD. Glucose metabolism impairment and endothelial dysfunction, mediated by oxidative stress and inflammation, are the main substrates of coronary atherosclerosis in DM [9]. Compared to IHD patients in Belarus, Sri Lanka showed higher numbers. More than half of the Sri Lankan patients we analyzed were diabetic patients (19 out of 30 patients), where only 5 patients out of the 30 Belarusian patients were diabetic patients. One in five adults in Sri Lanka has either diabetes or pre-diabetes and one third of those with diabetes is undiagnosed [10]. Increasing prevalence of diabetes is largely caused by higher rates of sugar and carbohydrate consumption and physical inactivity among Sri Lankans.

Sri Lanka being a developing country, the majority of the population tends to cover their daily food intake with larger amounts of carbohydrates and less proteins while in Belarus the protein intake is much higher than carbohydrates.

There is growing evidence of a link between psychological stress and the risk of IHD [11]. The hormone cortisol is released in response to stress. Studies suggest that high levels of cortisol from long term stress can increase blood cholesterol, triglycerides, blood sugar and blood pressure, which are IHD risk factors. Living with family or relatives, having pets can help reduce stress therefore these questions were asked from our selected IHD patients and the results showed that considerable amount of Belarusians live alone with a pet, and Sri Lankan patients stated that they share their homes with large families which also could be stressful accordingly.

All 60 patients were under long term medications for either hypertension, diabetes, hyperlipidemia, psychological conditions or other metabolic diseases.

### **Conclusion**

According to the discussion it shows that the selected Sri Lankan IHD patients showed more prominent risk factors and other contributing factors towards the risk factors that we discussed in this study than the Belarus patients. This is due to socioeconomic, cultural, geographical and behavioral differences between the two countries. Awareness of these major risk factors among Sri Lankans could reduce the mortality rates of IHD patients in Sri Lanka and also decrease IHD patients in total.

### **LITERATURE**

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