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ABSTRACT

Prevalence of Iron Deficiency Anemia among Hebron University Students and a Comparison of Sehgal Index with Other Complete Blood Count Indices

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Background: Iron-deficiency anemia (IDA) is the most common cause of anemia worldwide. It is considered to be a major public health problem in developing countries specifically in women and young children. The university students usually take fast junk food, and the food value of their diets is not always balanced. To our knowledge, the prevalence of IDA among Palestinian university students is not well studied.

Objectives: The current study aimed to determine the prevalence of iron deficiency anemia among university students by performing CBC and iron panel tests. We also aimed to examine the relative contribution of various risk factors to IDA in this population

Methods: A cross-sectional study based on enrolling a representative sample of 177 blood samples of two tubes (EDTA, Plain tubes) of adult university students aged between 18-24 years-old. CBC and iron deficiency profile (iron, TIBC and ferritin) levels were measured by correlated tests. Classification of the different stages of iron deficiency (Latent iron deficiency, Iron-transport deficiency, and Iron deficiency anemia) were determined using the international staging criteria. Blood samples were drawn to measure CBC by a Coulter Automated Cell Counter (Medonic) on the same day of collection, while iron profile testing was performed by architect plus. A structured-



questionnaire includes body mass index (BMI), dietary habits, and the status of awareness regarding their food intake will be delivered to students. All data have been analyzed by using SPSS- version 25, and p-value <0.05 will be considered significant.

Results: showed that the majority of participants (74.0%) are females with mean age 20.4 years (SD=1.478). Most of them were from the medical specialties (52.5%) and lived in urban areas (63.3%). Seventy percent of them were normal in BMI and 21.5% were in pre-obesity level (BMI: 25-29.9). The life-style characteristics of the participants indicated that they followed healthy nutritional habits, while less percent of them were practicing diet (14.1%) and sport (27.7%). In addition, 45.8% of the participants were aware of anemia, and 39% were suffering from different symptoms. However, 11.9% of participated females were suffering from irregularity in their menstrual cycles. It was found that there were statistically significance differences in means of Hb in relation to some variables including: Intake of Breakfast meal daily (0.019); Intake vegetables and fruits daily (0.005); Eating red meat weekly (0.003); smoking (0.002); and in Practicing Sport (0.008). In order to make sure about the relationship of these variables with the possibility of iron deficiency anemia to occur, the Odds Ratio was calculated. The prevalence of IDA stages varies depending on the population studied and the diagnostic criteria used. The former stages are difficult to determine as they are usually asymptomatic and not always detected, while later stages can be estimated. The prevalence of IDA was estimated to be 9%. It is estimated to be around 2% in adult men, but up to 16% in women of child-bearing age. In severe IDA the range is about 1-2%.

Conclusion: Our results showed the importance of early detection of IDA and periodic examination of ID profile among university students. Many educational health programs are needed to increase the university students' awareness about improving nutritional habits and their life-style.

Keywords: IDA, Transferrin, Ferritin, TIBC, Life style.