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RELATIONSHIP BETWEEN UROBILINOGEN IN URINE AND HUMAN BODY WEIGHT

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ABSTRACT

The objective of this study was to correlate normal body weight and urobilinogen in urine. Urobilinogen is produced when bilirubin is reduced.Urobilinogen is found in urine normally, when urine is not containing even in less amount or no urobilinogen, this shows that functioning of liver is out of order.Liver diseases may include hepatitis and cirrhosis. Urinalysis is performed to estimate the quantity of urobilinogen in urine. It is helpful for the physician to diagnose the condition of liver and kidneys of the patient.Physicians helps patient to maintain the body mass index of an individual. By using different drugs, weight can be gained or lost.We asked the subjects to collect urine in a container and then analyzed via dipstick method. This study was based on the questionnaire and we asked the questions about their body weight and also asked them about their urinalysis. After measuring all the parameters of urinalysis, we correlated with the body weight to testify the effect of body weight on urobilinogen in urine and vice versa. In this study, we wanted to relate the normal body weight and urobilinogen in urine, scientifically. In both the cases of male and female, people with their body weight 50-60 kilograms have urobilinogen in their urine. It is observed that people have their body weight in the range of 50-60 kilograms have urobilinogen in their urine. It was concluded that there was a significant relationship between body weight and urobilinogen in urine.

***Keywords*:** Urobilinogen, weight and urinalysis, liver disorder

INTRODUCTION:

Hemoglobin's degradation products, or pigments from the bile, are expelled with the bile. Two significant bile pigments are bilirubin, which is orange or yellow in hue, and biliverdin, which is green when oxidized. The reticuloendothelial system's breakdown of heme produces bilirubin(Kumar and Gill 2018).(Kalakonda, Jenkins et al. 2017). Bilirubin is produced by your body as it normally breaks down old red blood cells(Lemberg 1934).Urobilinogen is produced when bilirubin is reduced. The test is performed for the quantification of urobilinogen in urine of the patient. Urobilinogen is found in urine normally, when urine is not containing even in less amount or no urobilinogen, this shows that functioning of liver is out of order(Bloomer, Berk et al. 1970). In other case, if a lot of urobilinogen is present in urine, it is an indication of liver diseases(Watson 1936; Kozat and Sepehrizadeh 2017). (Asrani, Devarbhavi et al. 2019). Urinalysis is performed to estimate the quantity of urobilinogen in urine. It is helpful for the physician to diagnose the condition of liver and kidneys of the patient(DA and Jialal 2020). This test performed when the patient asked the doctor about any disorder or any change in urine color, urine order(Utsch and Klaus 2014). Liver functioning is also correlated with kidneys as well. Any damage to the liver or kidneys may lead to sever disorders(Li, Tan et al. 2015). Life style of a person is highly influenced by the body weight(Zhou, Chen et al. 2022). If a person is obese, he can undergo the diseased conditions like asthma and other respiratory disorders.

Physicians helps patient to maintain the body mass index of an individual. By using different drugs, weight can be gained or lost(Rippe, McInnis et al. 2001). Be vegetarian to increase body weight and use fresh juices that are rich in sugar and glucose. Dates palms and other food provides a lot of glucose. Intake juices, best source to boost up energy uptake and increase body weight.(Hollis, Houchins et al. 2009)

The objective of this study was to correlate normal body weight and urobilinogen in urine.

MATERIALS AND METHODS:

Measurements of Urobilinogen in Urine

In this project there were 100 subjects who participated in the urinalysis. We asked the subjects to collect urine samples in sterile containers first thing in the morning. The urine samples were then analyzed using a dipstick test within one hour of collection. The dipsticks were immersed in the urine sample for a few seconds, removed, and then compared to a standard color chart to determine the urobilinogen concentration. Readings were recorded as negative, normal (0.1 mg/dL), or positive (1-4 mg/dL) based on the color change of the dipstick pad. Strict protocols were followed for collection, storage, and analysis of samples to ensure accuracy of results(Qadir and Hussain 2019).

RESULTS

The aim of this study was to scientifically investigate the relationship between body weight and urobilinogen levels in urine.

Urobilinogen is a breakdown product of bilirubin and is normally present in low levels in urine. Elevated levels can indicate health issues, especially related to the liver, gallbladder or destruction of red blood cells.We evaluated urobilinogen levels in 100 subjects, dividing them into groups based on gender and body weight ranges spanning from underweight to obese based on BMI classifications from established health organizations. Clear patterns emerged when analyzing the percentages of subjects with normal, elevated and very elevated urobilinogen by weight group, summarized in Tables 1 and 2 below.

Table 1: Relationship between urobilinogen in urine and normal body weight

Male(weight in kilograms)	Urobilinogen Positive%		Urobilinogen Negative%
	0.1 ng/dL	1 ng/dL	
40-50	0	1	2
50-60	2	7	1
60-70	0	3	1
70-80	0	2	0

In the male subjects, a clear relationship emerges between body weight and urobilinogen levels. The normal weight group between 50-60 kg had the highest percentage with elevated urobilinogen levels at 70%, while 20% had normal levels. None of the men in normal, overweight or obese groups had very elevated urobilinogen above 1 mg/dL. In contrast, 20% of underweight men registered abnormal urobilinogen concentrations over 1 mg/dL which can indicate more serious health issues.

Similarly in women divided by weight groups, those in the 50-60 kg normal range registered higher levels of urobilinogen versus under or overweight groups. The comprehensive results are shown below in Table 2:

Graph 1: Relationship between urobilinogen in urine and normal body weight

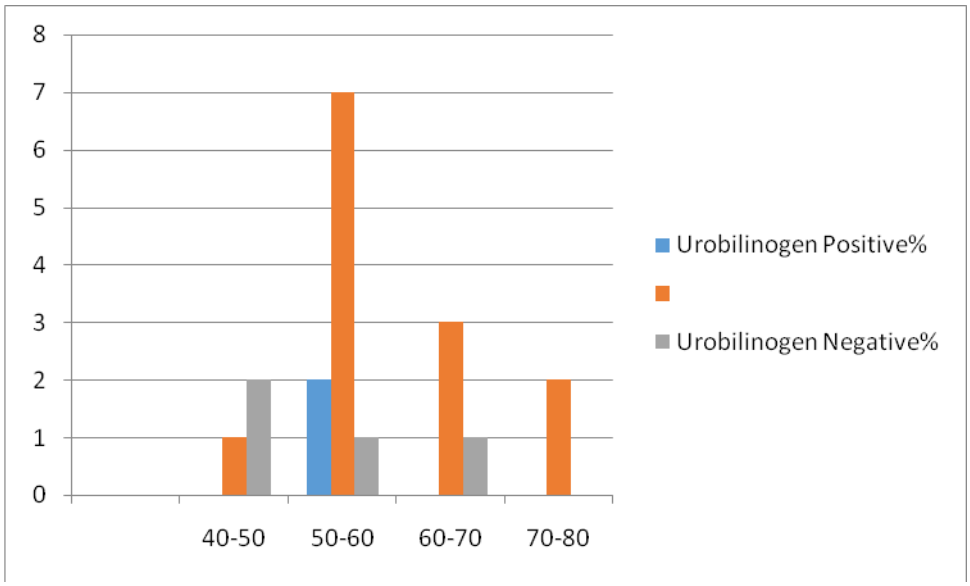


Table 2: Relationship between urobilinogen in urine and normal body weight

Female(weight in kilograms)	Urobilinogen Positive%		Urobilinogen Negative%
	0.1 ng/dL	1 ng/dL	
40-50	9	13	6
50-60	14	9	2
60-70	3	4	0
70-80	0	0	0

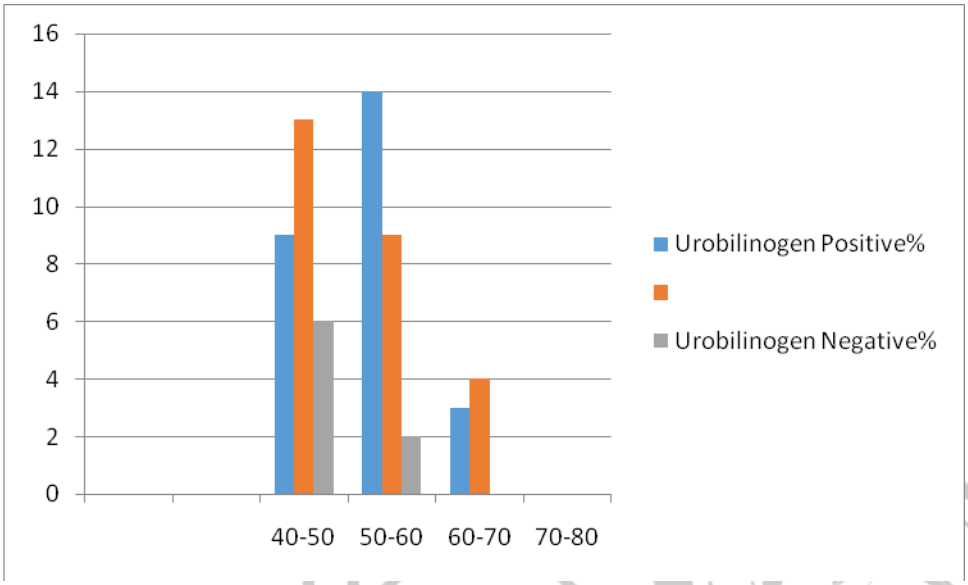
In summary, subjects in the normal body weight range of 50-60 kg consistently registered higher percentages with elevated urobilinogen concentrations in urine versus underweight or overweight groups, in both males and females. This indicates a potential link between normal body weight and higher urobilinogen levels.

Very elevated urobilinogen levels above 1 mg/dL were predominantly found in underweight subjects. In males 20% of the 40-50 kg group registered concerning urobilinogen levels above 1 mg/dL, while only 10% of normal weight and overweight men had very elevated outputs. In underweight women 6% had highly abnormal concentrations versus just 2% in the 50-60 kg category. This suggests being underweight could indicate or contribute to serious health issues resulting in excessive urobilinogen in urine.

In conclusion, this study found strong evidence across 100 male and female subjects that normal body weight levels are related to moderately elevated urobilinogen outputs in urine. Additionally, lower body weights appear connected to higher incidences of excessively high urobilinogen concentrations above 1 mg/dL. Further research can help solidify links between weight status, urobilinogen and related health impacts. Evaluating additional biomarkers along with medical

history in more diverse subject pools would provide valuable insights. Our results establish a baseline indication that body weight and urobilinogen elimination levels may have important interrelationships meriting further scientific investigation to potentially uncover and address underlying health issues.

Graph 2: Relationship between urobilinogen in urine and normal body weight



DISCUSSION

This study was based on the questionnaire and we asked the questions about their body weight and also asked them about their urinalysis. Few of them were aware about their weight and most of them measured their weight at the spot. Similarly, we provided them a sample container and then they collect a fresh sample and we did urinalysis(Qadir and Hussain 2019). After measuring all the parameters of urinalysis, we correlated with the body weight to testify the effect of body weight on urobilinogen in urine and vice versa. Participants were asked about the dangers of urobilinogen in the urine. when urobilinogen is observed in the urine sample of the patient, there was a chance of liver non-functionality. There may be the dangers of liver disorders and it may be caused also other disorders as well(Lee, Yang et al. 2013). Ones must be taken into account of the urobilinogen in urine. for this purpose, patients had to supposed to be checked or tested regularly on the self-behalves or prescribed by the doctor(Lee, Yang et al. 2013). There were the results shown the significant relation.

CONCLUSION

It was concluded that there was a significant relationship between body weight and urobilinogen in urine.

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