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**There is Difference Between Adult Male and
Female in Urine Output After Lasix Consumption**

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Abstract

Hypothesis: There is Difference Between Adult Male and Female in Urine Output After Lasix Consumption

Our aim was, by measuring the amount of urine output produced in 6 hours after the patient consumed our constant dosage of Lasix (40mg), to compare the effects of the drug on urine output in males versus females.

We collected 12 patients in total, 6 of them male, and 6 females split evenly. After consumption of the Furosemide dosage, each patient had their urine output measured every hour for 6 hours, which was the time we were to compare their total urine output in.

Statistically, it was proven that there was no significant difference in urine output at the male and female levels based on the p-value (= 0.142).

Introduction

Urine output is the amount of urine in millilitres excreted from the urogenital track. To compare between amounts excreted from different people, urine output is measured in a full day and so the unit of measurement for daily urine output is litres/day or millilitres per day to be more precise.

An excessive volume of urination for an adult is more than 2.5 liters of urine per day. However, this can vary depending on how much water you drink and what your total body water is. This problem is different from needing to urinate often.

Oliguria is a medical term for low urine output. In the case of an adult, this means less than 400 milliliters (mL) to 500 mL of urine per 24 hours. The numbers depend on weight in terms of children and infants

Anuria, sometimes called anuresis, refers to the lack of urine production. This can happen as a result of conditions like shock, severe blood loss and failure of your heart or kidneys. It can also be due to medications or toxins. Anuria is an emergency and can be life-threatening.

Furosemide is given to help treat fluid retention (edema) and swelling that is caused by congestive heart failure, liver disease, kidney disease, or other medical conditions.

It works by forcing the kidneys to excrete excess water and salt from the body through the urine.

By blocking the sodium-chloride cotransport system, furosemide prevents sodium and chloride reabsorption in the proximal and distal tubules, as well as the thick ascending loop of Henle, resulting in increased excretion of water, sodium, chloride, magnesium, and calcium.

Our aim is, by measuring the amount of urine output produced in 6 hours after the patient consumed our constant dosage of Lasix (40mg), to compare the effects of the drug on urine output in males versus females.

Material and Methods

For reliability and lack of bias in our comparison, we selected patients randomly who had conditions that had indications for furosemide diuretic use, but were not severe to the extent that urine output would be significantly affected. This selection was of prime importance to emphasize the effect of furosemide, solely, on the urine production in given patient.

We collected 12 patients in total, 6 of them male, and 6 females split evenly. The chosen dosage of Furosemide medication we had them consume was 40mg, which is the standard dosage indicated for patients with renal problems. After consumption of the Furosemide dosage, each patient had their urine output measured every hour for 6 hours, which was the time we were to compare their total urine output in.

Although our aim was not to compare urine output in the hours before 6 hours, we had recorded, in accumulation, the amount of urine produced by our patients every hour for the required 6 hours, so that, in the future, we may refer back to the results and compare the acceleration of urine production or other hypotheses and points of comparison for further development of research of the effect of furosemide on urine output.

Results

Table 1. Urine output every hour for a period of 6 hours for both groups, male (n = 6) and female (n = 6)

Subjects	Urine Output (mL)						
	1hr	2hrs	3hrs	4hrs	5hrs	6hrs	
1	50.4	100.8	151.2	201.6	252	302.4	Female
2	64.8	129.6	194.4	259.2	324	388.8	
3	72	144	216	288	360	432	
4	36	72	108	144	180	216	
5	57.6	115.2	172.8	230.4	288	345.6	
6	86.4	172.8	259.2	345.6	432	518.4	
7	72	144	216	288	360	432	Male
8	64.8	129.6	194.4	259.2	324	388.8	
9	100.8	201.6	302.4	403.2	504	604.8	
10	86.4	172.8	259.2	345.6	432	518.4	
11	50.4	100.8	151.2	201.6	252	302.4	
12	93.6	187.2	280.8	374.4	468	561.6	

Table 2. The mean, median and std. deviation for both groups, male (n= 6) and female (n= 6)

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
UO6hr	Female	6	367.2000	104.93244	42.83849
	Male	6	468.0000	114.02400	46.55010

Table 3. The P-value (P = 0.142) was calculated in this study, which included 12 volunteers, to determine whether there was a difference in urine output between the sexes.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
UO6hr	Equal variances assumed	.208	.658	-1.593-	10	.142	-100.80000-	63.26174	-241.75595-	40.15595
	Equal variances not assumed			-1.593-	9.932	.142	-100.80000-	63.26174	-241.88737-	40.28737

Discussion

Based on the p-value of 0.142, the hypothesis is rejected because there is no significant difference between the two groups compared and there is no effect of gender on urine output. When comparing the results of this current study with the other studies above, researchers note that they are in line with some previous studies. Women have always been underestimated in clinical drug trials. When both women and men were studied, in most cases the data were pooled without examining gender differences.

However, we cannot make any definite statements of the effect of Furosemide on urine output in each gender, as our statistics were limited in both quantity and quality.

To come up with a stronger claim with more convincing evidence, we could increase the number of subjects consuming the given drug as well as varying the amount of drug consumed to compare pharmacokinetics and metabolism of the drug.

As well as this recording for larger intervals and comparing urine output in the span of 24 hours may more clearly present, even subtle differences in urine output as a result of the differing effects of Furosemide on males versus females, to be any closer to making a more affirmed claim rejecting the hypothesis that there is a difference in urine output in males and females after consumption of Lasix 40mg, the standard dosage indicated for those in need of diuretics.

Finally, There is little information about these gender-related differences, so the researcher recommends referral to further studies as well as use of broader and different implications to reach more reliable, accurate and clear results.

Conclusion

This study was conducted to find out if there is a difference in urine output between adult men and women after taking Lasix. After volunteers administered furosemide and recorded the results, it was statistically proven that there was no significant difference in urine output at the male and female levels based on the p-value (= 0.142).

References

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