

Evaluation Of Kidney Function In Young Haemophilics

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Objectives:

➤Increased risk of chronic kidney disease had been defined in the aging population of haemophilia however this was less investigated in young haemophilics.

➤The purpose of this study is to assess hypertension and kidney function in young people with haemophilia (PWH).

Methods:

➤From February 2010 to November 2010, 48 haemophilia A and B patients (87% severe factor deficiency) and 35 age and sex matched healthy controls less than 40 years old were included (Table 1.)

➤Renal evaluation included blood and urine specimen and blood pressure assessment (BP).Elevated casual BP was defined based on task-force criteria as a systolic and/or diastolic BP \geq 95th percentile for age, gender, and height.

➤The study was approved by the ethics committee.

Table 1.		Haemophiliacs (n: 48) n (%)	Controls (n:35) n (%)	p
Age Groups	6-10 years	7 (14%)	5 (14%)	0.99
	>10-<18 years	13 (27%)	9 (25%)	
	18-40 years	28 (58%)	21 (60%)	
Haemophilia type	A	42 (87%)		
	B	6 (13%)		
Severity of haemophilia	Severe	42 (88%)		
	Moderate	2 (4%)		
	Mild	4 (2%)		
Presence of inhibitors		6 (13%)		
Treatment	Prophylaxis	31 (65%)		
	On-demand	17 (35%)		
Presence of arthropathy		30 (63%)		
Physiotherapy		2 (4%)		
Home exercise		11 (23%)		

Results:

➤The mean age of the PWHs was 21 years (range 6-40 years). Most of them were on prophylaxis (66% of haemophilia A and 50% of haemophilia B), others were on demand therapy. Median annual factor consumption for haemophilia A and B patients were 1846 U/kg (0-3600) and 840 U/kg (318-2434), respectively.

➤There was no difference in weight, height, BMI and waist circumference of haemophiliacs and controls.

➤Fifty percent of the PWHs between 18 and 40 years old were prehypertensive or hypertensive compared to 23% of \leq 18 years old ($p=0.03$). There was no difference in the prevalence of prehypertension/hypertension between haemophilics and controls.

➤Fasting blood glucose levels of PWHs were higher ($p=0.02$) compared to controls.

➤Twenty-three PWHs (48%) had a history of hematuria. Urinalysis was normal except two who had proteinuria and hematuria.

➤There was no difference in creatinine and cystatin c levels between PWHs and controls. None of the cases had a low glomerular filtration rate according to age and sex.

➤Two PWHs had an increase in b2-microglobulin level in urine.

Conclusions:

➤Several factors may implicate in the development of kidney damage in PWHs such as hypertension, diabetes and possibly kidney bleeding. Increased protein load due to clotting factor therapy was also considered as a theoretical risk factor.

➤Our study showed that prehypertension and hypertension are common in young PWHs. Fasting blood glucose level was higher in PWHs compared to controls. None of them had kidney damage evaluated by urine and blood tests although almost 50% had a history of kidney bleeding.

➤Blood pressure, fasting blood glucose level and kidney function measurements should be a part of standard haemophilia care.

References:

1. von Drygalski A, Kolaitis NA, Bettencourt R, et al. Prevalence and risk factors for hypertension in hemophilia. Hypertension. 2013;62:209-15
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