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Research Article

Prevalence of Deep Venous Thrombosis (DVT) in Jeddah

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Abstract:

Objective: To study the prevalence of deep vein thrombosis (DVT) of all adult patients scanned by Doppler ultrasound in the Department of Vascular Imaging (DVI) at King Abdulaziz University Hospital (KAUH) in Jeddah for patients who suspected to have DVT over a period of three years.

Methods: Retrospective study which included all the suspected cases of DVT visited KAUH during the period between January 2013 to December 2015.

Results: 1201 patients of patients were diagnosed to have DVT with mean age of54.8±19.8 years. There were 708 females and 493males. Doppler ultrasound detected 186 (15.7%) DVT. 76.2% was found symptomatic such as pain, swelling and edema. Elderly has been found to be the most common risk factor 425 (27.09%).

Conclusion: A high incidence of DVT in Jeddah 15.7 % and females were affected more than males.

Keywords: DVT, Prevalence, Doppler ultrasound, Vascular Imaging.

Introduction:

Deep vein thrombosis (DVT) occurs when a blood clot (thrombus) forms in one or more of the deep veins in your body, usually in the legs. DVT can cause leg pain or swelling, but may be asymptomatic[(1)].It is a serious condition that can cause permanent damage to the vein or a life-threating pulmonary embolism(PE). DVT usually begins around the leaflets of venous valves, especially in the calves, and can propagate superiorly[(2)].

DVT is directly related to stasis, hypercoagulability and trauma to the venous wall. Risk factors include various blood disorders, malignancy, estrogen administration, dehydration, recent surgery or trauma, prolonged immobility, heart failure, mass effect on the deep veins, obesity, pregnancy, age >60, and history of prior DVT.

In spite of DVT is treatable and its complications can be avoided safely, around 6% of cases of DVT and 12% of cases of pulmonary embolism lead to death within one month of diagnosis [(3)].Currently, there are many DVT prophylaxis guidelines available. Unfortunately, the guidelines are not utilized properly and many patients with the risk of DVT[(4)]. More than 10 centuries ago Avicenna described DVT [(5)], but Virchow was the first to mention the three factors contributing to thrombosis namely hypercoagulability, hemodynamic changes (stasis or turbulence) and endothelial injury and/or dysfunction. These 3 factors are now known as Virchow's triad[(6)].The symptoms of DVT may include pain, tenderness, swelling, redness and warmness[(7)].In the present research, we would like to focus on the prevalence of DVT in Jeddah and related symptoms and risk factors.

Patients and Method:

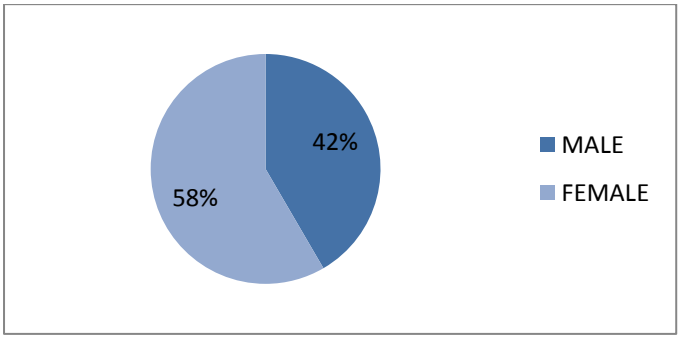
This was an analytical cross-sectional study based on the medical record data of patients with DVT, admitted to DVI at KAUH in Jeddah, Saudi Arabia between January 2013 and December 2015.All patients with suspected DVT during the study period were included and patients have been scanned by Doppler ultrasound for lower limbs during routine exam and sonographic findings were done by professional sinologists, sonographers and reported by experienced radiologists. Patient's age, sex, signs or symptoms, site of DVT as well as the risk factors were recorded.

Results:

During the study period, there were 1201 patients scanned at KAUH to show if they have DVT or not. 708 (58.2%) among them were female Table 1. Patients' mean age was54.8±19.8 years, ranging from 2 to 98 years. One hundred eighty six (15.7%) developed DVT Table 2. Symptomatic patients represented 915 (76.2%) and identified clinically by a swollen calf with redness or tenderness with or without pain and edema. The others asymptomatic revealed on 286

(23.8%)Table3.

Table (1)		
Gander	Frequency	Percent
Male	493	41.8%
Female	708	58.2%
Total	1201	100%



Table(2)		
Valid	Frequency	Percent
Negative	1015	84.3%
Positive	186	15.7%
Total	1201	100%

Table 3		
Symptomatic/Asymptomatic	Frequency	Percent
Symptomatic	915	76.2%
Asymptomatic	286	23.8%
Total	1201	100%

Right sided DVT was the most frequent type 583 of 1201(48.5%) while 581 of 1201 (48.4%) left sided and 37 of 1201 (3.1%) had bilateral DVT Table 4.One or more risk factors was/were detected in 982 patients. Among these 15 factors, elderly, CVD, DM, bedridden, malignancy, pregnancy, obesity and post-operative were the common factors encountered. In other 219 patients, no risk factor was found Table 5.

Table 4- Affected site.		
Site of suspected DVT	Frequency	Percent
Left	581	48.4%
Right	583	48.5%
Bilateral	37	3.1%
Total	1201	100%

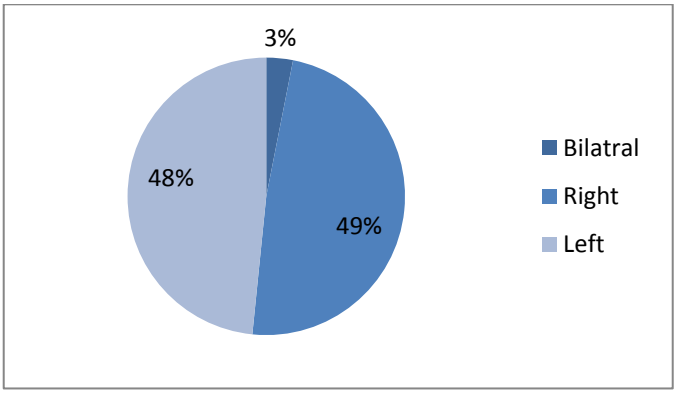


Table 5-risk factors.

risk factor	Frequency	Percent
elderly	425	27.09%
Cerebral vascular disease	271	17.27%
Diabetes	260	16.57%
none	219	13.96%
bedridden	120	7.65%
malignancy	75	4.78%
pregnant	63	4.02%
obesity	45	2.87%
Post-Operative	40	2.55%
Metastasis	22	1.40%
Coagulopathy	15	0.96%
Hypertension	6	0.38%
Smoking	3	0.19%
Pulmonary embolism	2	0.13%
hematoma	1	0.06%
nephrotic	1	0.06%
trauma	1	0.06%
Total	1569	100.0

Discussion:

Unfortunately, to the best of our knowledge there is no reference study conducted in the Kingdom of Saudi Arabia (KSA) about the true incidence of DVT. Worldwide, the incidence is 1 per1000 population annually[8]. The incidence increase sharply after the age of 45 years, and the entrance is strongly bounded to the age of the patient [8].

This study demonstrate significant increase in the incidence in Saudi Arabia as compared to the rest of the world, reaching up to 15.7 %. The main risk factor in Kingdom is also related to the age of the patient, more than 27%. The reasons for an increased thrombosis risk with age are not understood, but may relate to increasing presence of other illnesses predisposing to thrombosis, to increases in coagulation potential, or some combination of these.

The patients may present with swelling, redness, and pain of the leg; but are frequently asymptomatic. Clinical examination is line in assessment of DVT. The ultrasound is the most accurate diagnostic tool, however it depends on the operating skills.

Conclusion:

There is significant increase in the incidence of DVT and the Saudi Arabia population as compared to the rest of the world measuring up to 15.7 %. We recommended. Further recesses and analysis of the risk factors to minimize the incidence and related morbidity and mortality.

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