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Awareness of Pericardial Effusion among Allied Health Sciences Students

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Introduction: Pericardial effusion is the buildup of too much fluid in the double-layered, saclike structure around the heart (pericardium).The space between these layers typically contains a thin layer of fluid. Fluid can also build up around the heart without inflammation, such as from bleeding, related to cancer or after chest trauma. Aim: To access the knowledge level and create awareness about Pericardial effusion among Allied health science students. Materials and methods: This cross-sectional research was conducted with a self-administered questionnaire containing ten questions distributed amongst 100 Allied Health science students.The questionnaire assessed the awareness of Pericardial effusion, it's etiology, diagnostic tools, treatment,complications among allied health sciences students.The responses were recorded and analysed. Result: Among 100 allied health sciences students, 79.2% of the students know about the Etiology or causes of Pericardial effusion.69.3%of the students know the diagnostic tools of pericardial effusion. 60.4% of the students know that NSAIDS can be used to treat pericardial effusion.59.4% of the students know whether male or female is affected more by pericardial effusion.70.3% of the students know that Chronic pericardial effusion will lead to heart failure. Conclusion: There is moderate awareness amongst AHS students about Pericardial effusion. However, enhanced awareness initiatives and educational programmes together with increased importance for curriculum improvements that further promote knowledge and awareness of Pericardial effusion should be initiated for further understanding and benefits.

Keywords: Awareness, Pericardial effusion, myocardial diseases, students, Allied health sciences.

1. Introduction

Pericardial effusion is a common finding in clinical practice either as incidental finding or manifestation of a systemic or cardiac disease. It may be either isolated or associated with pericarditis with or without an underlying disease. The etiology is varied and may be either infectious or noninfectious .A pericardial effusion occurs when a significant amount of fluid fills the pericardial space.[1][2]

Individuals without pericardial effusion have a small amount of pericardial fluid (15 mL to 50 mL), which helps promote cardiac chamber interaction by allowing the heart to move freely without restriction.When pericardial fluid accumulates slowly, the pericardium can expand to accommodate as much as 2 liters of fluid. However, when acute, only a small volume can increase intrapericardial pressures, resulting in clinical symptoms.

Pericardial effusion may appear as transudate (hydro-Pericardium), exudate, pyopericardiumor hemopericardium. Large effusions are common with neoplastic, Tuberculous, cholesterol, uremic pericarditis, myxedema, and parasitoses . Effusions that develop slowly can be remarkably asymptomatic, while rapidly accumulating smaller effusions can present with tamponade.[3-5]

A pericardial effusion is an abnormal accumulation of fluid in the pericardial cavity. The pericardium is a two-part membrane surrounding the heart: the outer fibrous connective membrane and an inner two-layered serous membrane.[6]

The two layers of the serous membrane enclose the pericardial cavity (the potential space) between them. This pericardial space contains a small amount of pericardial fluid. The fluid is normally 15-50 mL in volume. The pericardium, specifically the pericardial fluid, provides lubrication, maintains the anatomic position of the heart in the chest, and also serves as a barrier to protect the heart from infection and inflammation in adjacent tissues and organs. [7]

The first challenge to the clinician is to try to establish an etiologic diagnosis. Sometimes, the pericardial effusion can be easily related to a known underlying disease, such as acute myocardial infarction, cardiac surgery, end-stage renal disease or widespread metastatic neoplasm. When no obvious cause is apparent, some clinical findings can be useful to establish a diagnosis of probability. The presence of acute inflammatory signs (chest pain, fever, pericardial friction rub) is predictive for acute idiopathic pericarditis irrespective of the size of the effusion or the presence or absence of tamponade. Severe effusion with absence of inflammatory signs and absence of tamponade is predictive for chronic idiopathic pericardial effusion, and tamponade without inflammatory signs for neoplastic pericardial effusion. [8]

When a clinician is faced with a patient who presents with a pericardial effusion, the first challenge is to identify its etiology. In some instances, it can be easily related to an associated condition or medical procedure . This happens, for example, in patients who develop pericardial effusion in the course of acute myocardial infarction in patients with end-stage renal failure, in patients receiving chest radiation, or in patients recently submitted to an invasive cardiac procedure with endocavitary catheters. However, even in these contexts, the possibility of unrelated etiologies should be considered. The finding of a pericardial effusion in patients with underlying malignancy creates a more complex dilemma, as not infrequently pericardial effusion is due to alternative causes and not to direct neoplastic pericardial

involvement. [9]

Pericardial effusion is an important medical condition that needs prompt attention and AHSstudents will be required in the management of this condition during the course of treatment with this disease. Hence this study was done with aim to assessing the knowledge level and create awareness about Pericardial effusion among Allied health sciences students.

2. Materials and methods:

This cross-sectional research was conducted with a self-administered questionnaire containing ten questions distributed amongst 100 Allied Health science students.The students were randomly selected across various disciplines of Allied Health Sciences.The study setting was designated in the university campus.The survey instrument was a questionnaire pre tested and evaluated for validity and reliability concerns.

The questionnaire included ten questions eliciting the demographic data through open ended responses and multiple choice questions for the other responses.The study was approved by the Institutional Ethical Committee and informed consent was obtained from the participants. The questionnaire was posted in an online platform and the identity of the respondents were kept confidential.The questionnaire assessed the awareness of Pericardial effusion and it's Etiology or causes and diagnostic tools, treatment, whether male or female is more affected and complications. The responses were recorded and analysed.Therewere no incomplete responses and no dropouts from the study. The final data obtained was organised, tabulated and subjected to statistical analysis.

The salient questions in the study are

1.Are you aware of Etiology or causes of Pericardial effusion?

2.Are you aware of diagnostic methods in pericardial effusion?

3.Are you aware that NSAIDS can be used to treat pericardial effusion?

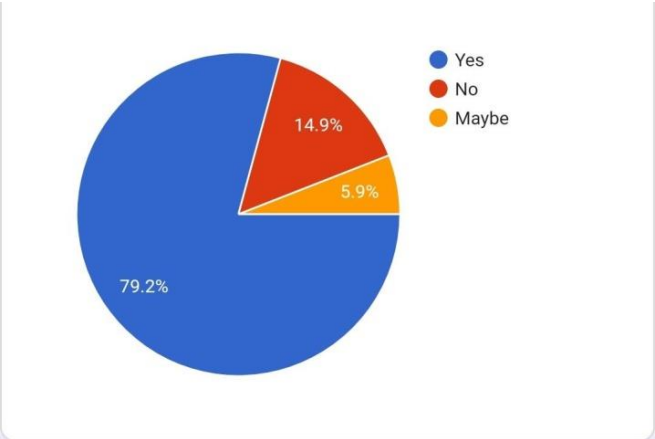
4.Are you aware whether male or female is affected more in pericardial effusion?

5.Are you aware that Chronic pericardial effusion will lead to heart failure?

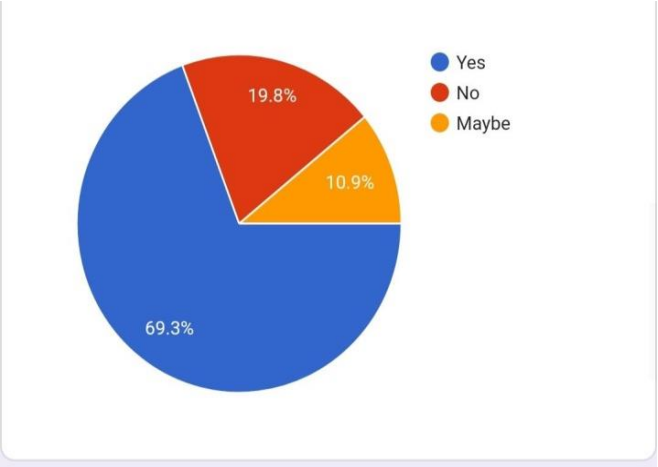
3. Result:

Among 100 Allied Health Sciences Students 79.2% of the students know about the Etiology of Pericardial effusion.(Fig.1).69.3% of the students know the diagnostic tools of pericardial effusion (Fig-2).60.4% of the students know that NSAIDS can be used to treat pericardial effusion (Fig-3).59.4% of the students know about whether male or female is more affected in pericardial effusion (Fig-4).70.3% of the students know that Chronic pericardial effusion will lead to heart failure (Fig-5).

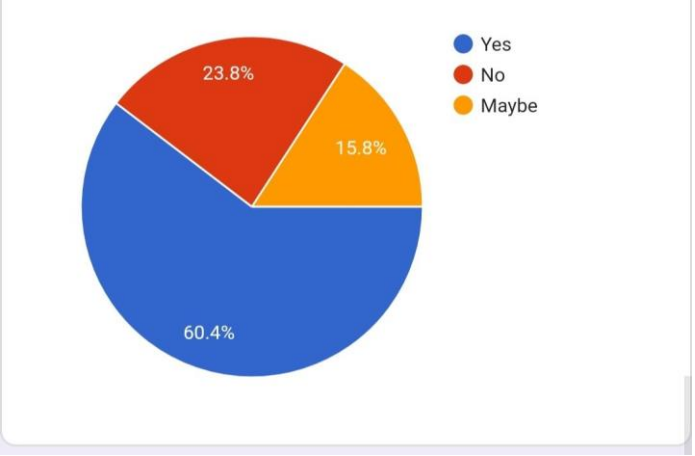
(Fig.1) Awareness about Etiology or causes of Pericardial effusion:



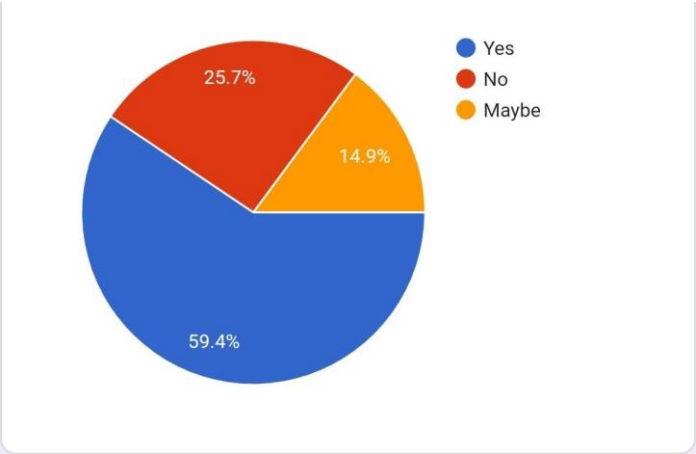
(Fig.2) Awareness about Diagnostic tools of Pericardial effusion:



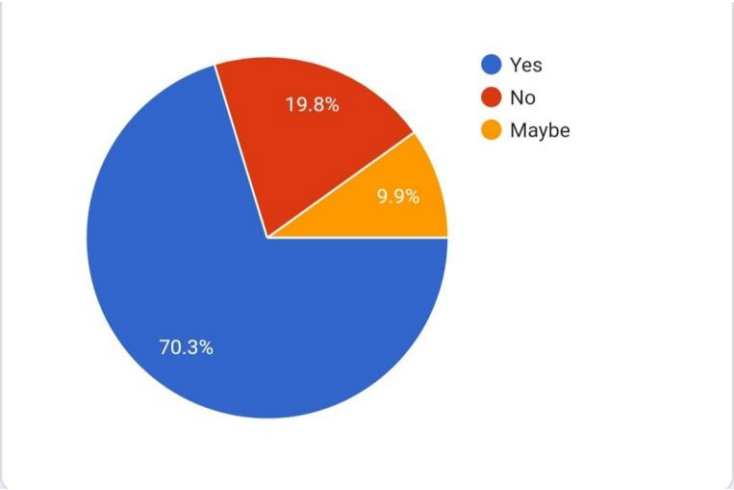
(Fig.3) Awareness about NSAIDS can be used to treat Pericardial effusion:



(Fig.4) Awareness about whether male or female is more affected in Pericardial effusion:



(Fig.5) Awareness about Chronic Pericardial effusion will lead to heart failure:



4. Discussion:

Pericardial effusion is the buildup of too much fluid in the double-layered, saclike structure around the heart (pericardium). The space between these layers typically contains a thin layer of fluid.

Etiology of pericardial effusion may include Autoimmune disorders, such as rheumatoid arthritis or lupus,Cancer of the heart ,Spread of cancer, particularly lung cancer, breast cancer or Hodgkin's lymphoma,Radiation therapy for cancer if the heart was in the area of the radiation,Chesttrauma,Inflammation of the pericardium,hypothyroidism,Use of certain drugs ,Viral, bacterial, fungal or parasitic infection,uremia [10] .79.2 % of the students were aware about Etiology of pericardial effusion in our study.This shows the curriculum creates adequate aware about etiology of Pericardial effusion among allied health sciences students.

There are various ranges of diagnostic tools for Pericardial effusion - Electrocardiogram (ECG) records hearts electrical activity,Echocardiogram uses sound waves to create an image of blood flow and heart,Chest x-ray, Cardiac CT uses X-rays to make a video of blood vessels and heart , Cardiac MRI uses radio waves and magnets to create images of heart [11].In our study 69.3% of the students were aware about diagnostic tools of Pericardial effusion.

Treatment of Pericardial effusion includes.Medications such as Aspirin,Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen ,Colchicine (Colcrys, Mitigare),A corticosteroid, such as prednisone[12].In our study 60.4% students were aware about NSAIDS can be used to treat Pericardial effusion.

Pericardial effusion frequently occurred at 21-30 years old. Based on gender, pericardial effusion is not signicantly distributed between male and female. In about, 46 patients (24 male, 22 female; age range 16 to 90 years, mean 54 years) were affected so, pericardial effusion may occur in both male and female. [13].In our study 59.4% students were aware about whether male or female is more affected by Pericardial effusion.

Pericardial effusion is the buildup of too much fluid in the double-layered, saclike structure around the heart (pericardium).Pericardial effusion can put pressure on the heart, affecting how the heart works. If untreated, it may lead to heart failure or death in extreme cases.[14].In our survey 70.3% students are aware chronic Pericardial effusion will lead to heart failure.

5. Conclusion:

There is moderate awareness amongst AHS students about Pericardial effusion. However, enhanced awareness initiatives and educational programmes together with increased importance for curriculum improvements that further promote knowledge and awareness of Pericardial effusion should be initiated for further understanding and benefits.

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