



## **Case Report on Congestive Cardiac Failure with Pneumonia with Bronchial Asthma**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

**Introduction:** Congestive cardiac failure is a pathophysiologic state when the heart is not able to maintain its cardiac output to meet the demand of metabolizing tissues. Pneumonia is the inflammation of parenchyma of lungs. Bronchial Asthma is a disease of airway produced by hypersensitivity inflammatory response of tracheobronchial tree to a variety of stimuli resulting in reversible narrowing of the air passages.

**Clinical Finding:** Patient having pain in chest since 2-3 days and it radiating to back and shoulder. Patient is experiencing breathlessness even at rest stage. Patient is also having a diagnosis of Asthma since 1 year.

**Diagnostic Evaluation:** Patient had undergone the Respective Diagnostic evaluation. Complete Blood Count, MRI, chest X-ray and 2D Echo.

**Therapeutic Intervention:** Patient have been prescribed the following Medication. Inj. Lasix 400mgX BD, Inj. Sodabcarb in 100ml saline stat, Inj. Doxy 100mgX BD, Inj. Piptaz 20mgX BD, Inj. PAN 40mgX TDS, Tab. Flucon 150 mg X OD.

**Outcome:** After the providing the nursing care the pain level in chest had been minimized and patient is not having any breathlessness in resting stage and his condition also has been improved after the care provided.

**Conclusion:** The patient was admitted in Medicine Intensive Care Unit [MICU] AVBRH, Sawangi (Meghe), Wardha with the known case of Congestive Cardiac failure with Pneumonia and Bronchial Asthma. After providing appropriate nursing care his condition has been improved.

*Keywords: Congestive cardiac failure; hypersensitivity; inflammatory; pneumonia; radiating.*

## 1. INTRODUCTION

Congestive cardiac failure is a pathophysiologic state when the heart is not able to maintain its cardiac output to meet the demand of metabolizing tissues. There are various types of Cardiac Failure they are left heart failure, right heart failure and congestive heart failure [1]. Pneumonia is the inflammation of parenchyma of lungs. The predisposing factor local or systemic, in one way or other. The pneumonia is mainly classified in 2 type's i.e. Primary and Secondary [2]. The clinical manifestation occurs in extreme ages of life. The elderly debilitated individuals are susceptible to this. The mortality is high in untreated cases, prevention of pneumonia include pneumococcal vaccination reduces the incidence of pneumonia, hospitalization for cardiac condition, and deaths in the older adult population [3]. Bronchial Asthma is a diseases of airway produced by hypersensitivity inflammatory response of tracheobronchial tree to a variety of stimuli resulting in reversible narrowing of the air passages [4]. The patient of bronchial asthma segregates into the episode asthma, Severe acute asthma, Chronic or acute on chronic asthma [5].

### 1.1 Patient Identification

A male patient of 65years from Shirolī Ghatanjī taluka, Yavatmal District was admitted to Medicine Intensive Care Unit [MICU], AVBRH on 15<sup>th</sup> November 2021 with a known case of Congestive Cardiac Failure. He is 55kg in weight and his height is 180 cm.

### 1.2 Patient Medical History

A male patient of 65years old was brought to AVBRH on 15<sup>th</sup> November 2021 by his family with a chief complaint of having pain in chest in the last 2-3 days and it radiating to back and shoulder. Patient is experiencing breathlessness even at rest stage. He is known case of Congestive Cardiac Failure with Pneumonia and Bronchial Asthma. His breathing level was abnormal and was weak and inactive.

### 1.3 Past Medical History

My patient was diagnosed to have a Bronchial Asthma since last 1 year's means at the age of 64<sup>th</sup> years of his lifespan. He was admitted to hospital for having pain in chest and feeling like breathlessness. Till then, he was taken to the hospital for Asthmatic checkup purposes.

### 1.4 Family History

There are 5 members in his family. My patient was diagnosed to have Congestive Cardiac Failure with pneumonia and Bronchial Asthma. When hereditary history was taken then the conclusion was came that there are no one in the family with respective diseases. All the members of family were healthy expect my patient.

### 1.5 Past Intervention and Outcomes

My patient was diagnosed to have a Bronchial Asthma since last 1 year's means at the age of 64<sup>th</sup> years of his lifespan, then from that time onwards he was taken to hospital for continuous observation. Later it was found that he had developed a complication Congestive Cardiac Failure and Pneumonia.

### 1.6 Clinical Finding

Patient having pain in chest in the last 2-3 days and it radiating to back and shoulder. Patient is experiencing breathlessness even at rest stage. Patient is also having a diagnosis of Asthma in the last 1 year.

### 1.7 Physical Examination

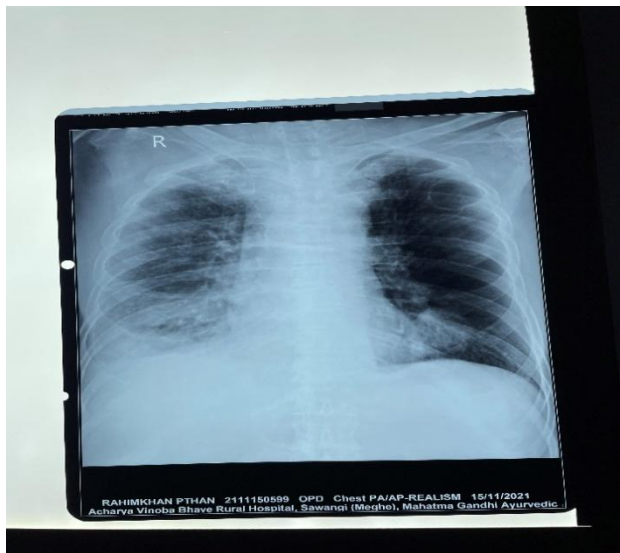
There is not such abnormality found in any of the Head-to-Toe examination. The major finding is listed below.

### 1.8 General

The patient's weight should be recorded to ascertain how far they are from their "dry" weight. Tachycardia, Tachypnea (an increased rate of breathing) and an increase work of breathing, narrow pulse pressure.

### 1.9 Heart

The heart sound, a displaced point of maximum impulse (PMI) consistent with an enlarged left ventricle, if the right ventricular pressure is increased, a parasternal heave may be present, signifying the compensatory increase in contraction strength. A functional holosystolic murmur of mitral regurgitation may be heard if the heart dilates excessively, underlying valvular heart disease cause of congestive heart failure such as aortic stenosis.



...ous are noted in bilateral lungs, few of them shows cavitory ches within, pathosis of consolidation are noted in bilateral lungs.

apparently normal.

normal.

**REVEALS:**  
fous in bilateral lung

**RADIOMETER ABL800 BASIC**

ABL800 BASIC HealthScan Diagnostics ABO: S 195UL 07:35 AM 11/16/2021  
PATIENT REPORT Sample #

Identifications  
Patient ID RAHM KHAN  
Patient Last Name KHAN  
Patient First Name RAHM  
Sample type Not specified  
T 37.0°C

Blood Gas Values  
pH 7.207 [ 7.350 - 7.450 ]  
pCO<sub>2</sub> 35.2 mmHg [ 35.0 - 45.0 ]  
pO<sub>2</sub> 68.1 mmHg [ 80.0 - 100 ]

Oximetry Values  
sO<sub>2</sub> 95.1 %  
FO<sub>2</sub> 94.3 %  
FIHb<sub>g</sub> 4.9 %

Temperature Corrected Values  
pH(T) 7.207  
pCO<sub>2</sub>(T) 35.2 mmHg  
pO<sub>2</sub>(T) 68.1 mmHg

Oxygen Status  
pO<sub>2</sub> 68.1 mmHg

Acid Base Status  
cBase(Eo) -12.9 mmol/L  
cHCO<sub>3</sub>(F) 14.1 mmol/L

Notes  
↓ Value(s) below reference range  
c Calculated value(s)  
e Estimated value(s)  
pO<sub>2</sub> 0210 Calibration error(s) present  
pCO<sub>2</sub>(T) 0210 Calibration error(s) present

Printed 7:38 63AM 11/16/2021

Data Mangla Institute of Medical Sciences (Deemed to be University) NAAC Grade A+  
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**MEDICINE ( DIVISION OF CARDIOLOGY )**  
2D ECHO REPORT ADULT

Name: Rahim Khan Age/Sex: 65/M Date: 15/11/21  
Unit: \_\_\_\_\_ Receipt No. \_\_\_\_\_ Op. No. \_\_\_\_\_

M-Mode  
LVIDD \_\_\_\_\_ LA \_\_\_\_\_  
LVDS \_\_\_\_\_ AORTIC ANNULUS \_\_\_\_\_  
IVC \_\_\_\_\_ AIVC \_\_\_\_\_  
EF \_\_\_\_\_ RE \_\_\_\_\_  
E/A \_\_\_\_\_ RA \_\_\_\_\_  
TIV \_\_\_\_\_

CHAMBERS - Geometry and Function  
LV Segmental contraction and thickness  
IW \_\_\_\_\_  
PW \_\_\_\_\_  
IVS \_\_\_\_\_  
AW/APEX \_\_\_\_\_  
LW \_\_\_\_\_

Global LV Hypertrophy

DIASTOLIC FUNCTION AND DOPPLER DATA

E	A	e'	a'
DT	S'	E/e'	TAPSV

Pulmonary vein \_\_\_\_\_ Hepatic vein \_\_\_\_\_

Diastolic Function - PERICARDIUM IVC

VALVES

	Thickness	Area	Regurgitation	Velocity/Gradient
Atrial				
Aortic				
Pulmonary				
Tricuspid				

Mitral Valve Score M T S C

(VERY POOR echo window)  
CONCLUSION - Tachycardia noted during study  
- Global LV hypertrophy  
- EF ~ 35 to 40%  
ADVICE - WID TEE RUC 30+RAP  
- Mildly dilated LA/LV  
- Grade I diastolic dysfunction

Dr. \_\_\_\_\_  
Acharya Vinoba Bhave Rural Hospital

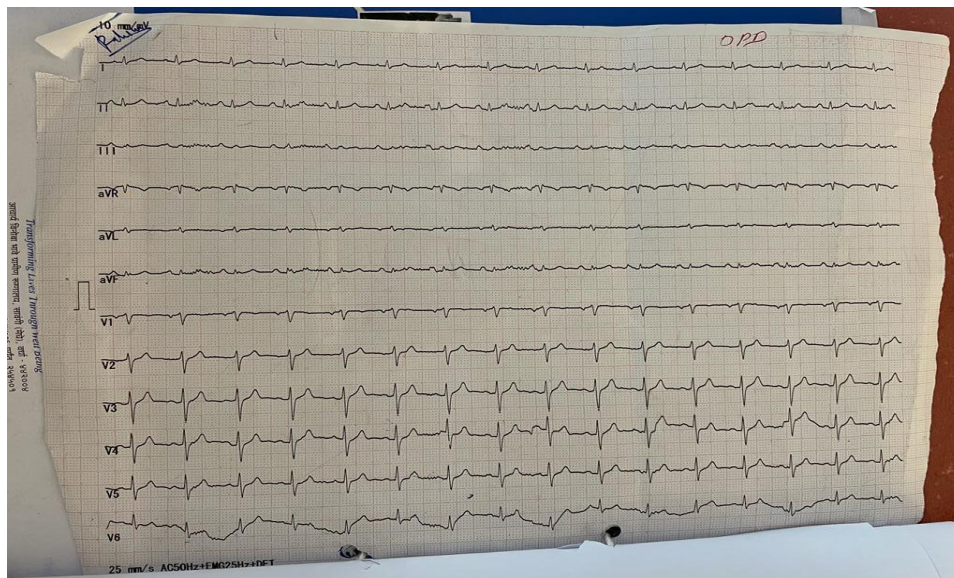


Fig. 1. Diagnostic evaluation of patient

**Table 1. Patient Investigation**

Investigation	Patient Value	Remark
Blood Gas Values		
pH	7.207	
pCO <sub>2</sub>	35.2 mmHg	Decreased.
pO <sub>2</sub>	88.1 mmHg	Decreased.
Oximetry Values		
sO <sub>2</sub>	95.1 %	Normal.
FO <sub>2</sub> Hb <sub>e</sub>	94.3 %	Normal.
FHHb <sub>e</sub>	4.9 %	Normal.
Temperature Corrected Values		
pH(T)	7.207	Normal.
pCO <sub>2</sub> (T)	35.2 mmHg	Normal.
pO <sub>2</sub> (T)	88.1 mmHg	Normal.
Oxygen status.		
p50 <sub>e</sub>	31.51 mmHg	Normal.
Acid Base Status.		
cBase(Ecf) <sub>c</sub>	-12.9 mmol/L	Normal.
cHCO <sub>3</sub> <sup>-</sup> (P,st) <sub>c</sub>	14.1 mmol/L	Normal.

Vital Signs: Temperature= 37.8<sup>0</sup>C, Pulse= 60 beats/minutes, Respiration= 14 breath/minutes, Blood Pressure=110/70 mg.

**1.10 Diagnostic Assessment**

Patient had undergone the Respective Diagnostic evaluation. Complete Blood Count, MRI, chest X ray and 2D Echo.

**1.11 Therapeutic Intervention**

Patient have been prescribed the following Medication. Inj. Lasix 400mgX BD, Inj. Sodabcarb in 100ml saline stat, Inj. Doxy 100mgX BD, Inj. Piptaz 20mgX BD, Inj. PAN 40mgX TDS, Tab. Flucon 150 mg X OD.

**2. DISCUSSION**

Congestive cardiac failure is a pathophysiologic state when the heart is not able to maintain its cardiac output to meet the demand of metabolizing tissues [6]. On an average there are 4,00,000 new cases every year worldwide, nearly there are 1,60,000 new cases from India only. Heart failure does not indicate the stop working of heart [7]. Due to various causes the pressure in the heart increases and is not able to pump the enough oxygen supply to the heart. On an average there are 10-15 new cases per 1000 persons every year worldwide, nearly there are 657 new cases per 1000 persons from India only. Pneumonia is the inflammation of parenchyma of lungs. Pneumonia treatment focuses on eradicating the illness while also preventing

consequences [8]. People with community-acquired pneumonia may typically be treated with medicines at home. Although most symptoms subside after a few days or weeks, exhaustion might last for a month or more. Treatment options are determined on the kind and severity of your pneumonia, as well as your age and overall health. The options include Antibiotics medicines are used to treat bacterial pneumonia [9]. Maternal pneumonia is pneumonia that develops during pregnancy. Pregnant women are more susceptible to infections like pneumonia. This is related to the immune system's natural dampening that occurs during pregnancy. Pneumonia symptoms do not alter by trimester. However, owing to other discomforts you may be experiencing, you may notice some of them more later in your pregnancy [10].

Bronchial Asthma is a disease of airway produced by hypersensitivity inflammatory response of tracheobronchial tree to a variety of stimuli resulting in reversible narrowing of the air passages. Bronchial asthma was found to be prevalent in 13.1 percent of the population [11]. 10.2 percent experienced an asthma attack in the previous year and were classified as current asthmatics. The study discovered that male individuals and those of a younger age group were more impacted. Asthma is a common allergy condition, and researchers are trying to figure out what causes it [12]. As most asthmatics are allergic to aeroallergens, earlier investigations suggested that asthma is a T-helper-type-2 (Th2)-cell reliant IgE-mediated

allergic illness. 41 Mucus cell hyperplasia and infiltration of inflammatory cells such as CD4+ T cells, eosinophils, and mast cells are among the pathological features of asthma [13].

### 3. CONCLUSION

Congestive Cardiac Failure is common cause in adult, when they reach to 5-6 decade of their lifespan. If it is not treated on right time it may produce complications. It is very important to take preventive measures when they have diagnosed the diseases condition. My patient didn't take the required precaution so he had developed the complication [Pneumonia]. As he had developed the complication appropriate treatment is going on to cure the diseases.

### CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant/Patient's consent and ethical approval has been collected and preserved by the authors.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

### REFERENCES

1. Heart failure - Symptoms and causes - Mayo Clinic [Internet]. [Cited 2021 Nov 23]. Available: <https://www.mayoclinic.org/diseases-conditions/heart-failure/symptoms-causes/syc-20373142>
2. Jain V, Vashisht R, Yilmaz G, Bhardwaj A. Pneumonia Pathology. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021. [Cited 2021 Nov 23]. Available: <http://www.ncbi.nlm.nih.gov/books/NBK526116/>
3. Ellison RT, Donowitz GR. Acute Pneumonia. Mand Douglas Bennetts Princ Pract Infect Dis. 2015;823-846.e5.
4. Asthma - Lung and Airway Disorders [Internet]. MSD Manual Consumer Version. [Cited 2021 Nov 23]. Available: <https://www.msdmanuals.com/en-in/home/lung-and-airway-disorders/asthma/asthma>
5. Asthma attack - Symptoms and causes - Mayo Clinic [Internet]. [Cited 2021 Nov 23]. Available: <https://www.mayoclinic.org/diseases-conditions/asthma-attack/symptoms-causes/syc-20354268>
6. Asthma: Symptoms, Types & Treatment [Internet]. [Cited 2021 Nov 23]. Available: <https://my.clevelandclinic.org/health/diseases/6424-asthma>
7. Huffman MD, Prabhakaran D. Heart failure: Epidemiology and prevention in India. Natl Med J India. 2010;23(5):283–8.
8. National Treatment Guidelines. :64.
9. COVID-19 Mythbusters – World Health Organization [Internet]. [Cited 2021 Nov 23]. Available: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>
10. Goodnight WH, Soper DE. Pneumonia in pregnancy. Crit Care Med. 2005 Oct;33(10 Suppl):S390-397.
11. Asthmatic bronchiole and normal bronchiole: MedlinePlus Medical Encyclopedia Image [Internet]. [Cited 2021 Nov 23]. Available: <https://medlineplus.gov/ency/images/19375.htm>
12. Trivedi M, Denton E. Asthma in Children and Adults—What Are the Differences and What Can They Tell us About Asthma? Front Pediatr. 2019 Jun 25;7:256.
13. Fahy JV. Type 2 inflammation in asthma — present in most, absent in many. Nat Rev Immunol. 2015 Jan;15(1):57–65.

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