Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Pulmonary thrombo embolism in hospitalized deaths- Autopsy based study

Dr. Hashim Abbas[1], Dr. Mohammad Shuaib[2]

[1]Assistant Professor, Department of Forensic Medicine, K M Medical College Mathura;
[2]Assistant Professor, Department of Forensic Medicine, Venkateshwara Institute of Medical Sciences, Gajraula

ABSTRACT:
Background: The present study was conducted to determine thromboembolism in Autopsy cases. **Materials & Methods:** 104 Autopsy cases of both genders were recruited. Out of 104, 12 cases have died due to pulmonary thromboembolism. The hearts were dissected along the course of the blood flow. The grossing and automatic processing, block making and reporting was done. **Results:** Out of 104 cases, males were 62 and females were 42. The cause of death was burn in 74 cases and multiple injuries in 30 cases. The cause of death was pulmonary thrombo embolism (PTE) in 12, septicemia in 82 and shock in 10 cases. The difference was significant (P< 0.05). **Conclusion:** The prevalence of pulmonary thrombo embolism in autopsy cases was 11.5%.
Key words: Autopsy, Pulmonary thrombo embolism, Hypercoagulative state.

Received: 22 September, 2018 Accepted: 28 October, 2018

Corresponding author: Dr. Mohammad Shuaib, Assistant Professor, Department of Forensic Medicine, Venkateshwara Institute of Medical Sciences, Gajraula

This article may be cited as: Abbas H, Shuaib M. Pulmonary thrombo embolism in hospitalized deaths- Autopsy based study. J Adv Med Dent Scie Res 2019;7(10):200-203.

INTRODUCTION

Pulmonary thrombo embolism is the severe end stage of many different diseases producing prolonged patient immobilization or a hypercoagulative state. The three main predisposing factors to the development of vascular thrombi are hypercoagulability, venous stasis and vascular injury (Virchow's triad).[1] The trauma patient is particularly prone to the development of deep venous thrombosis, especially with lower extremity fractures. Although there are many avenues of prophylaxis, including anticoagulation, vena cava filter and sequential compression devices/stockings or other squeezing or compressional treatments of the legs, these are not always applicable to a particular patient.[2]

Pulmonary embolism (PE) is a relatively common acute cardiovascular disorder with high early mortality rates that, despite advances in diagnosis and treatment over the past 30 years, have not changed significantly. Due to pulmonary bed obstruction, PE can result in acute right ventricular (RV) failure, a life-threatening condition.[3] Because most patients ultimately die within the first hours of presentation, early diagnosis is of paramount importance. Emergency management is usually highly effective and RV failure is potentially reversible. Depending on PE presentation, initial treatment is primarily focused on restoring adequate blood flow through the pulmonary bed and preventing PE recurrence.[4]

Pulmonary embolism is a frequent cause of death, particularly in persons over 70 years of age. The diagnosis of massive, lobar, segmental, minor, or recurrent pulmonary embolism constitutes a major problem, particularly in elderly patients. Massive pulmonary embolism is life -threatening and must be treated as an emergency, requiring urgent hospital admission.[5] The present study was conducted to determine thromboembolism in Autopsy cases.

MATERIALS & METHODS

The present study comprised of 104 Autopsy cases of both genders.

Out of 104, 12 cases have died due to pulmonary thromboembolism. The hearts were dissected along the course of the blood flow. Significant thrombus is occluded in the pulmonary arteries as a emboli and to confirm the cause of death, dissection of legs are done to find out the location of deep venous thrombosis. The thrombus containing veins is identified and then sent to the histological examination. The grossing and automatic processing, block making and reporting was done. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 104		
Gender	**Males**	**Females**
Number	62	42

Table I shows that out of 104 cases, males were 62 and females were 42.

Table II Distribution for Reason of Post mortem findings

Cause of death	Number	P value
Burn	74	0.01
Multiple injuries	30	

Table II, graph I shows that the cause of death was burn in 74 cases and multiple injuries in 30 cases. The difference was significant (P< 0.05).

Graph I Reason of Post mortem findings

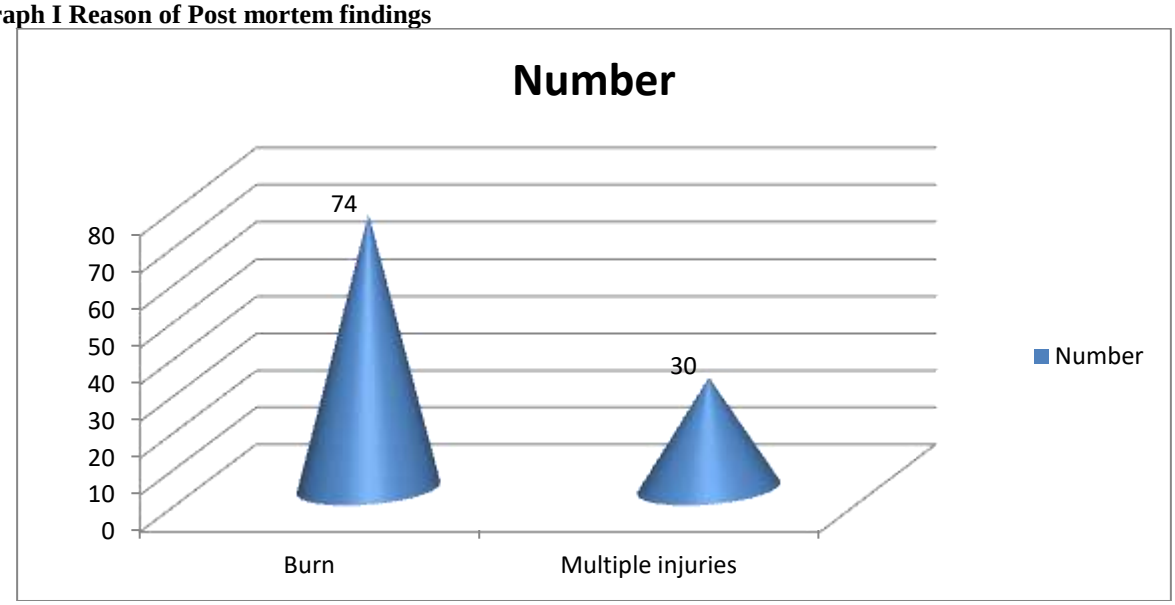
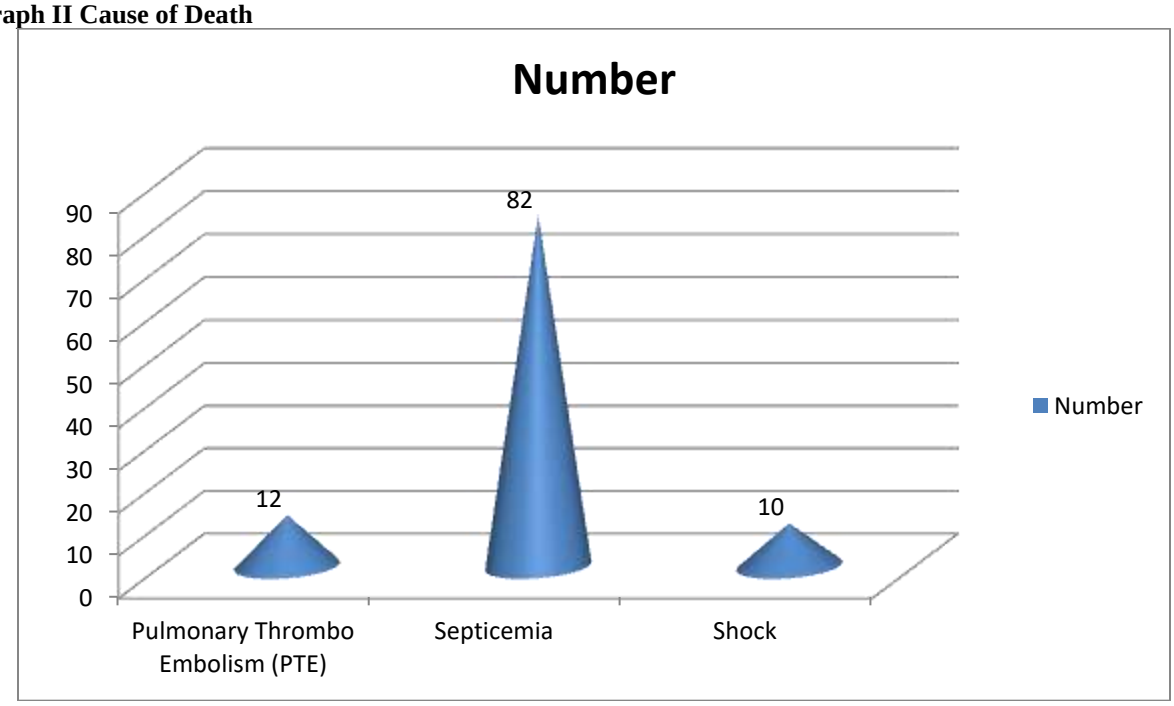


Table III Cause of Death

Cause of death	Number	P value
Pulmonary Thrombo Embolism (PTE)	12	0.01
Septicemia	82	
Shock	10	

Table III, graph II shows that the cause of death was pulmonary thrombo embolism (PTE) in 12, septicemia in 82 and shock in 10 cases. The difference was significant (P< 0.05).

Graph II Cause of Death



DISCUSSION

The incidence of PE is estimated to be approximately 60 to 70 per 100,000, and that of venous thrombosis approximately 124 per 100,000 of the general population. The European guidelines for the diagnosis and management of PE report annual incidence rates of venous thrombosis and PE of approximately 0.5 to 1.0 per 1000 inhabitants.[6] However, the actual figures are likely to be substantially higher because silent PE can develop in up to 40% to 50% of patients with deep vein thrombosis (DVT). In addition, autopsy studies have shown that PE had been diagnosed before death in 30% to 45% of patients. After coronary artery disease and stroke, acute PE ranks third among the most common types of cardiovascular diseases.[7] While clinical data indicate that most cases of PE occur at 60 to 70 years of age, autopsy data show the highest incidence among individuals 70 to 80 years of age. If untreated, acute PE is associated with a significant mortality rate (as high as 30%), whereas the death rate of diagnosed and treated PE is 8%. Up to 10% of acute PE patients die suddenly.[8] The present study was conducted to determine thromboembolism in Autopsy cases.

In present study, out of 104 cases, males were 62 and females were 42. The cause of death was burn in 74 cases and multiple injuries in 30 cases. Babu et al[9] found that out of seventy five cases gender distribution is male, 27 and female 48 of percentage of female 64% and male 36%. Out of seventy five cases 84% are the cases of burns with female and male ratio of 61.3%: 22.6% and Road traffic accident cases are 16% and female and male ratio are 2.6%; 13.3%. Among the seventy five cases, seven cases are reported with evidence of pulmonary thromboembolism with 9.3% with female and male ratio of 2.6%:6.6%. Out of the seventy five cases, 56 cases are reported with a history of Burns and 74.6% of the people died due to the septicemia with female and male ratio of 52%:22.6% and 16% of the people died due to shock in cases of Burns with female and male ratio of 9.3%: 6.6%.

We observed that the cause of death was pulmonary thrombo embolism (PTE) in 12, septicemia in 82 and shock in 10 cases. Venous thromboembolism (VTE) is believed to result from an interaction of the individual patient's risk factors and the setting or circumstances where it occurs. Patient-associated risk factors are usually permanent, whereas the circumstances tend to be transient in nature. Patient risk factors include age, personal history of VTE, active malignancy or another disabling conditions such as heart or respiratory failure, congenital or acquired coagulation disorders, hormone replacement therapy and oral contraception. According to the British Thoracic Society, risk factors are traditionally classified into major and minor categories.[10]

The most severe form of PE is an acute massive PE (ie, high risk) with mortality rates exceeding 20% irrespective of treatment. Acute massive PE can ultimately result in sudden death secondary to massive obstruction of the pulmonary bed (approximately 10% of PE cases).[11] Acute massive PE is characterized by hemodynamic instability (ie, manifesting itself as syncope, the prognostic significance of which remains controversial and the Guidelines of the European

Society of Cardiology does not include it in the definition of high-risk PE), persistent hypotension and cardiogenic shock (with hypotension defined as a sudden fall in systolic blood pressure to <90 mmHg or more, or by ≥40 mmHg from baseline).[12]

CONCLUSION

Authors found that the prevalence of pulmonary thrombo embolism in autopsy cases was 11.5%.

REFERENCES

1. Oger E. Incidence of venous thromboembolism in a community-based study in western France. Thromb Haemost. 2000;83:657–60.
2. Torbicki A, Perrier A, Konstantidines S, et al. Guidelines on the diagnosis and management of acute pulmonary embolism. Eur Heart J. 2008;29:2276–315.
3. Charles A Catanase,Color Atlas of Forensic Medicine and Pathology 2001; 1-5.
4. C.G.Tedeschi,William G. Ecker T, Luke G. Tedeshi, Forensic Medicine- A Study in trauma and Environmental Hazards, Mechanical Trauma 1977; 406-419.
5. Davidson, Principles and practice of Medicine17th Edition, 1995; 245-247.
6. David Dolinak- Sudden natural Death, Forensic Pathology-Principles and Practice 2005; 104.
7. Grifoni S, Olivotto I, Cecchini P, et al. Short-term clinical outcome of patients with acute pulmonary embolism, normal blood pressure, and echocardiographic right ventricular dysfunction. Circulation. 2000;101:2817–22.
8. Joffe HV, Kucher N, Tapson VF, et al. Upper-extremity deep vein thrombosis: A prospective registry of 592 patients. Circulation. 2004;110:1605–11.
9. Babu M, Muchukota S, Venkatesulu B, Mamatha K, Venkateswarlu B. A Study on Prevalence of Pulmonary Thrombo Embolism in Bedridden Hospitalized Deaths-Autopsy based Study. Indian Journal of Forensic Medicine & Toxicology. 2018;12(2):71-5.
10. Meignan M, Rosso J, Gauthier H, et al. Systematic lung scans reveal a high frequency of silent pulmonary embolism in patients with proximal deep venous thrombosis. Arch Intern Med. 2000;160:159–64.
11. Goldhaber SZ, Visani L, De Rosa M. Acute pulmonary embolism: Clinical outcomes in the International Cooperative Pulmonary Embolism Registry (ICOPER) Lancet. 1999;353:1386–9.
12. Pineda LA, Hathwar VS, Grant BJ. Clinical suspicion of fatal pulmonary embolism. Chest. 2001;120:791–5.