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# ORIGINAL RESEARCH

## Histopathological Analysis of Lung Lesions at Autopsy

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***ABSTRACT*:**
**Background:** The spectrums of lung lesions include congestion, oedema, various inflammatory lesions, chronic obstructive pulmonary diseases and neoplastic lesions. The present study was conducted to determine autopsy findings of lung in study group. **Materials & Methods:** The present study comprised of 140 lungs specimens received at autopsy. Both Lungs were examined grossly for colour, weight, volume (collapsed or inflated), consistency, areas of fibrosis, oedema etc. Biopsy sections from both lungs were processed, 4 to 5 micron thickness sections were take and stained with Haematoxylin and Eosin stain and examined microscopically. **Results:** Age group 0-20 years comprised of 20 cases, 21-40 years 70 cases and 41-60 years 50 cases. The difference was significant (P< 0.05). Congestion/odema was seen in 42 males and 30 females, tuberculosis in 12 males and 8 females, pneumonia in 6 males and 4 females, ARDS in 10 males and 8 females, ARDS in 4 males and 7 females and malignancy in 6 males and 3 females. The difference was significant (P< 0.05). **Conclusion:** The most common lung lesion found at autopsy was congestion/odema followed by tuberculosis. Males had higher prevalence and age group 41-60 years had maximum lesions.
**Key words:** Autopsy, Congestion, Lung.

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### INTRODUCTION

Autopsy as a word means self-study of dead body. It is an important way to find out the condition of internal organs, to evaluate disease or injury that could explain the cause and manner of person's death. Lungs examination is the most important part of both the medico-legal as well as clinical autopsies. The medico-legal autopsy is carried out by forensic expert to help the law by establishing identity, cause of death, time of death, and ante-mortem or post-mortem nature of crime.[1]

Lungs are also secondarily involved in almost all form of terminal events due to cardio vascular causes. The spectrums of lung lesions include congestion, oedema, various inflammatory lesions, chronic obstructive pulmonary diseases and neoplastic lesions. Gross pathologic examination of autopsy lungs yields information regarding status of lung-collapsed or hyper inflated, presence of scarring, fibrosis, bullae, consolidation, nodules, infarction, secretions, edema, congestion, granuloma /abscess formation and also provides information regarding status of bronchi & pleura which may provide hint to the diagnosis.[2]

Clinical history, laboratory investigations and imaging studies give supportive information but prompt pathological diagnosis is required for confirmation along with prognosis of the disease. A large number of conditions that involves the parenchyma of lung which may be associated with inflammation, fibrosis or granulomatous reactions. It is important to determine the leading causes of death to establish correct prophylactic actions, which is the least expensive strategy for preventing further pulmonary dysfunction and avoiding the need for lung biopsies.[3] The present study was conducted to determine autopsy findings of lung in study group.

## MATERIALS & METHODS

The present study was conducted in the department of general pathology. It comprised of 140 lungs specimens received at autopsy. The study protocol was approved from institutional ethical committee.

Both Lungs were examined grossly for colour, weight, volume (collapsed or inflated), consistency, areas of fibrosis, oedema etc. Biopsy sections from both lungs were processed, 4 to 5 micron thickness sections were take and stained with Haematoxylin and Eosin stain and examined microscopically. Ziehl Neelson stain and Period Acid Stain were also done wherever required. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

## RESULTS

**Table I Age wise distribution of lung lesions**

| Age group (Years) | Number | Percentage | P value |
|---|---|---|---|
| 0-20 years | 20 | 14.2 | 0.01 |
| 21-40 years | 70 | 50 | |
| 41-60 years | 50 | 35.8 | |

Table I, Graph I shows that age group 0-20 years comprised of 20 cases, 21-40 years 70 cases and 41-60 years 50 cases. The difference was significant (P< 0.05).

**Graph I**

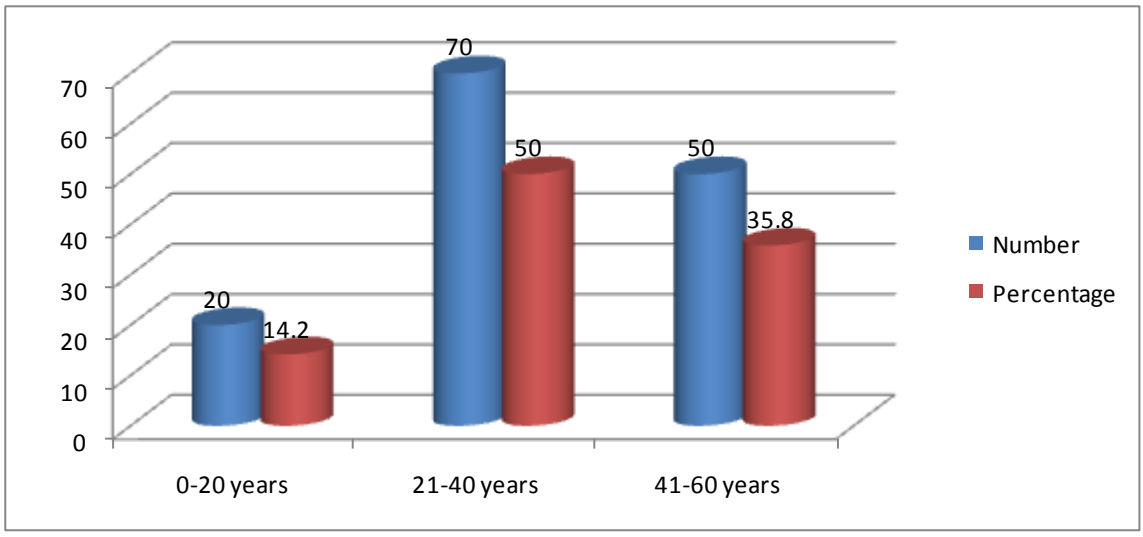
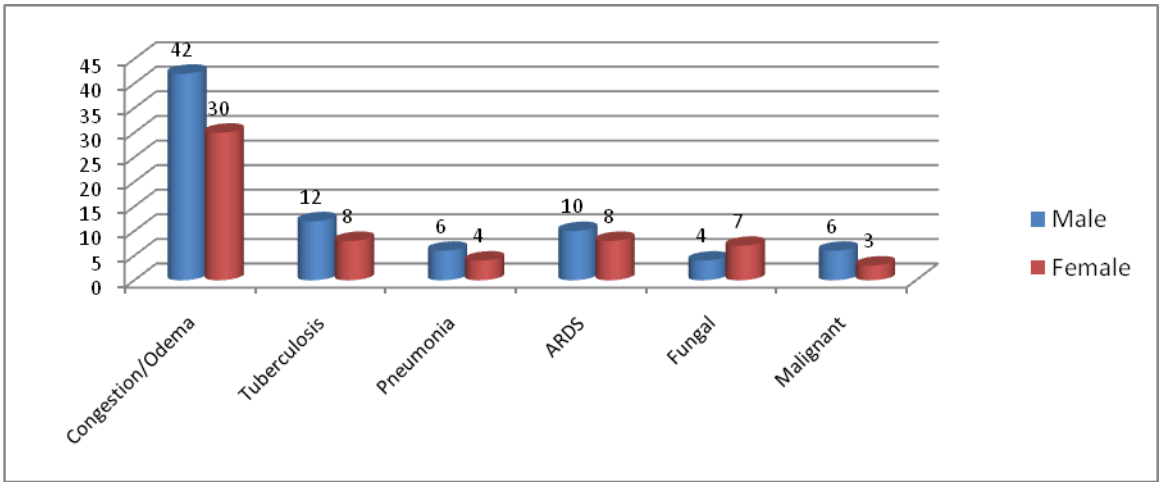



**Table II Gender wise distribution of cases**

| Lesions | Male | Female | P value |
|---|---|---|---|
| Congestion/Odema | 42 | 30 | 0.02 |
| Tuberculosis | 12 | 8 | |
| Pneumonia | 6 | 4 | |
| ARDS | 10 | 8 | |
| Fungal | 4 | 7 | |
| Malignant | 6 | 3 | |

Table II, Graph II shows that lesion included congestion/odema seen in 42 males and 30 females, tuberculosis in 12 males and 8 females, pneumonia in 6 males and 4 females, ARDS in 10 males and 8 females, ARDS in 4 males and 7 females and malignancy in 6 males and 3 females. The difference was significant (P< 0.05).

**Graph II**




## DISCUSSION

Autopsy is often followed by histopathological examination of tissues from various organs. In cases where tissue is not properly preserved in fixative or the tissue is a non-representative sample, final histopathological report is often not possible. However, despite pitfalls like delays in carrying out autopsies, improper sampling, improper preservation and transport, microscopic examination of tissues is still considered a very useful method to study the disease process in situ, thus enriching the medical knowledge. Studies have reported a significant major and minor discrepancies between clinical and autopsy diagnoses.[4,5] Autopsy is an important and most useful way to find out the condition of internal organs, In which a thorough examination performed on a body after death, to evaluate disease or injury that may be present and to determine the cause and manner of a person's death.[6]

In present study, determine autopsy findings of lung. We found that age group 0-20 years comprised of 20 cases, 21-40 years 70 cases and 41-60 years 50 cases which is similar to study by Bal Manjeet et al[7] and Chauhan et al.[8]

We found that lesion included congestion/odema seen in 42 males and 30 females, tuberculosis in 12 males and 8 females, pneumonia in 6 males and 4 females, ARDS in 10 males and 8 females, ARDS in 4 males and 7 females and malignancy in 6 males and 3 females. This is similar to Bal Manjeet et al.[7]

Chauhan et al[8] found that total of 335 lungs from autopsy specimens were studied. Lung diseases are more common in males as compared to females. Most common lung pathological findings are of pneumonia (14.62%), emphysema (7.76%), tuberculosis (6.26%) & malignant lesions (2.08%) among the cases studied.

Kandy NC et al[9] found 26.3% cases of pneumonia on histopathology of lung samples in their series of 51 cases. Their study emphasized discordance in the diagnosis made on gross examination of lungs and final histopathological diagnosis at autopsy, particularly in cases of bronchopneumonia. Hunt CR et al[10] also had similar observations of discordance in the final diagnosis. However, we did not examine this aspect of findings in our study.

## CONCLUSION

The most common lung lesion found at autopsy was congestion/odema followed by tuberculosis. Males had higher prevalence and age group 41-60 years had maximum lesions.

## REFERENCES

1. Fang F, Lin FR, Li HZ. Clinicopathologic analysis of organizing pneumonia in elderly Autopsies. Zhonghua Bing li xue za zhi Chinese Journal of Pathology. 2004; 33(2):113-116.
2. Sanefuji H, Adachi H, Baba K, Oda S, Nakata H, Hayashi M et al. An autopsy case of miliary tuberculosis & review of autopsy cases in japan. J UOEH. 1984; 6(1):75-86.
3. Hjorth L, Jensen HS, Noer H. Acute pulmonary infections at autopsy. A study of clinical and microscopic diagnoses at autopsy compared with microscopic autopsy findings. Ugeskr Laeger. 1995; 157(49): 6873-6.
4. Nadesan K. The importance of the medico-legal autopsy. Malays J Pathol. 1997;19(2):105-09.
5. Kotabagi RB, Charati SC, Jayachandar D. Review article clinical autopsy vs medicolegal autopsy. MJAFI. 2005;61(3):258-63.
6. Kuijpers CC, Fronczek J, Van de Goot FR, Niessen HW, Van Diest PJ, Jiwa M, et al. The value of autopsies in the era of high-tech medicine: discrepant findings persist. J Clin Pathol. 2014;67(6):512–19.

7. Bal Manjeet S, Sethi PS, Suri Anil K, Bodal Vijay K, Kaur G. Histopathological pattern in lungs autopsies. JPAFMAT 2008;8(2):29-31.
8. Chauhan G, Agrawal M, Thakkar N, Parghi B. Spectrum of histopathological lesions in lung autopsy. J Res Med Den Sci 2015; 3(2):109-12.
9. Kandy NC, Pai MR, Reba Philipose T. Role of histopathology on autopsy study an audit. SAS Journal of Medicine. 2015;1(3):7-15.
10. Hunt CR, Benbow EW, Knox WF, McMahon RF, McWilliam LJ. Can histopathologists diagnose bronchopneumonia? J Clin Pathol. 1995; 48(2):120–23.