Adult Clinical Necropsies: the gold standard of clinical practice are decreasing worldwide. And in Coimbra?

A retrospective study from 2007 to 2018 comparing clinical and autopsy diagnosis

Lai, A.; Pimentão, M. B.; Ramalhosa, F.; Faria, C.; Almeida, V.; Moreira, H.; Almeida, R.; Fraga, J.; Caetano, O.; Cipirano, M. A.

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Disclosure Information:

I DECLARE THAT I DO NOT HAVE ANY CONFLICTS OF INTEREST
Background

Clinical Necropsies

- Important key to understand diseases
- The last procedure that can be performed
- The gold standard of medical practice!

Declining numbers...

- Improvement in modern diagnostic methods
- Poor expectations from clinicians
- Procedure that not all pathologists “feel comfortable” to perform
- Economic, social, religious factors...

1970
Objectives:

• To evaluate the most frequent necropsies diagnosis in a third care center;
• To evaluate the concordance between clinical hypothesis and necropsies diagnosis.
Methods

Exclusion criteria:
Age

2007
2018

ICD-10

31st European Congress of Pathology
Pathology is Nice
7–11 September 2019, Nice, France
Results

134 Complete Adults Autopsies

- Female: 55 (41%)
- Male: 79 (59%)

Median Age: 61y (range 19-89 years)

- 2007
- 2018
### Results

### Who requests more clinical necropsies?

<table>
<thead>
<tr>
<th>Department</th>
<th>Nº of Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>33 (25%)</td>
</tr>
<tr>
<td>Intensive Care</td>
<td>32 (24%)</td>
</tr>
<tr>
<td>General Surgery</td>
<td>11 (8%)</td>
</tr>
</tbody>
</table>

- Cardio-Thoracic Surgery
- Neurology                         9 each
- Emergency Department              6
- Hematology                        5
- Cardiac Intensive Care Unit       4 each
- Psychiatry                        3 each
- Pneumology                        3 each
- Infectiology                      3 each
- Cardiology                        3 each
- Gastroenterology                  2 each
- Orthopaedics                      2 each
- Neurosurgery                      2 each
- Treatment Unit of Advanced Heart Failure 1 each
- Hepatic Transplantation Unit Paediatric and Adult 1 each
- Reumatology                       1 each
Results

Necropsies Diagnosis

- Diseases of the Circulatory System (46%) N=62
- Diseases of the Respiratory System (16%) N=21
- Malignant Neoplasms (9%) N=12
- Multiorgan Failure (8%) N=11
- Symptoms, Signs and Abnormal Clinical Laboratory Findings (17%) N=23
- Diseases of the Digestive System (3%) N=4
- Diseases of the Genitourinary System (1%) N=1

N=62
Results

Necropsies Diagnosis

Pneumonia/Bronchopneumonia (12%) N=16
Diseases of the Respiratory System (16%) N=21
Symptoms, Signs and Abnormal Clinical Laboratory Findings (17%) N=23
Diseases of the Circulatory System (46%) N=62
Diseases of the Digestive System (3%) N=4
Multiorgan Failure (8%) N=11
Malignant Neoplasms (9%) N=12
Diseases of the Genitourinary System (1%) N=1
Pulmonary Thromboembolism (18%) N=24
Results

73 cases (54%)

51 cases (38%)

10 cases (8%)
Results

- 73 cases (54%)
- 51 cases (38%)
- 10 cases (8%)
Results

51 cases (38%)

Diseases of the Circulatory System (54%)
- N=27

- Diseases of the Respiratory System (14%)
  - N=7

- Diseases of the Digestive System (4%)
  - N=4

- Malignant Neoplasms (8%)
  - N=4

- Multiorgan Failure (8%)
  - N=2

- Diseases of the Genitourinary System (2%)
  - N=5

- Symptoms, Signs and Abnormal Clinical and Laboratory Findings (10%)
  - N=7

- Diseases of the Digestive System (4%)

Necropsies Diagnosis

- Diseases of the Circulatory System (46%)
- Diseases of the Respiratory System (38%)
- Malignant Neoplasms (17%)
- Multiorgan Failure (15%)
- Symptoms, Signs and Abnormal Clinical Laboratory Findings (13%)
Results

51 cases (38%)

Diseases of the Circulatory System (54%)

Diseases of the Genitourinary System (2%)

Multiorgan Failure (8%)

Malignant Neoplasms (8%)

Diseases of the Digestive System (4%)

Diseases of the Respiratory System (14%)

Symptoms, Signs and Abnormal Clinical and Laboratory Findings (10%)

Pulmonary Thromboembolism (27.5%) N=14

N=27

N=7

N=5

N=4

N=4

N=2
Results

73 cases (54%)

51 cases (38%)

10 cases (8%)
## Discussion

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Myocardial Infarction</td>
<td>1 case</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>1 case</td>
</tr>
<tr>
<td>Cardiac Tamponade</td>
<td>1 case</td>
</tr>
<tr>
<td>Pneumonia/Bronchopneumonia</td>
<td>2 cases</td>
</tr>
<tr>
<td>Pulmonary Thromboembolism</td>
<td>1 case</td>
</tr>
<tr>
<td>Aortic Aneurysm and Dissection</td>
<td>1 case</td>
</tr>
<tr>
<td>Hypovolaemic Shock</td>
<td>1 case</td>
</tr>
<tr>
<td>Sepsis</td>
<td>2 cases</td>
</tr>
</tbody>
</table>

10 cases (8%)
Commentaries

➢ Included all types of missed diagnosis (Goldman criteria)

➢ The clinician who request the autopsy may not be the clinician who has been following the patient...?

Emergency context...

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Reinforce the crucial role of clinical necropsies in modern era!

- Access the new diagnostic methods and therapeutic procedures;
- Investigation the impact of environmental/lifestyle and occupational factors;
- Provide samples for research purposes.

Total = 46%

51 cases (38%)
10 cases (8%)
“Dead Man Tell No Tales” ?
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