

Sudden natural death in Khartoum Mortuary

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Abstract:

Background:

The sudden natural death is defined as: Death occurs within 24 hours from the onset of symptoms. The disclosing of the causes of sudden natural death is important for prevention and improving outcome. The objectives of this study were to determine the causes of sudden natural death in Khartoum Mortuary

Methods

Descriptive, cross-sectional study of natural sudden death in Khartoum Mortuary, which was located in Khartoum Teaching Hospital and offers services to the state. The autopsy records of 2007, which were 150, were considered. Data were collected by a structured check list, and analysis was done by the SPSS soft ware.

Results:

The most important systems involved in sudden natural deaths were respiratory (49.3%), cardiovascular (24%), gastro intestinal (15.3%) and cerebral (4%), while the leading causes of sudden natural death were pneumonia (20%), myocardial infarction (17.3%) and tuberculosis (14%).

Sudden natural death occurred in slightly higher ratio in the age group 40 years and below (50.1%), males were dominating (83%).

Conclusion:

The commonest causes of sudden natural death, which were pneumonia, myocardial infarction and tuberculosis, were different from the literature in which the commonest causes were myocardial infarction followed by pulmonary embolism.

The study highlighted the importance of respiratory diseases besides myocardial infarction as leading causes of sudden natural death, and the need for further researches in this issue.

Key words: pneumonia, myocardial infarction and tuberculosis, postmortem



According to WHO, the sudden natural death is defined as "Death occurs within 24 hours from the onset of symptoms". In forensic practice sudden death occurs within minutes or even seconds after the onset of symptoms¹.

It is crucial to remember that the sudden death is not necessarily unexpected and an unexpected death is not necessarily sudden but those two facets are often combined.

Death occurs in different age groups is classified into five categories: Un natural death such as homicide, suicide, drowning, poisoning and all other violent deaths, Death not sudden from known medical conditions, Sudden death attributed to a known pre-existing condition, unexpected sudden death which remained unexplained, unexpected

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sudden death attributed to natural causes discovered at postmortem examination¹.

In developed countries many of the deaths in younger people are assumed to be drug-related especially when there is a history of drug use and an autopsy is not performed²

Heart disease is the first cause of death (57%) of which coronary artery disease accounts for 27% of these causes. When a natural death is very rapid, the cause is almost inevitably cardiovascular. Virtually no other mode of death operates so quickly. Extra cardiac causes, even those elsewhere in cardiovascular system are rarely so rapidly fatal like respiratory, cerebral, renal, gastrointestinal and others³.

Pulmonary thromboembolism [PTE] is a common cause of death in the United State. It is the second most common cause of unexpected death in most age groups. The highest incidence of recognized PTE occurs in hospitalized patients. Autopsy results showed that as many as 60% of patients dying in the hospital have had a PTE, but the diagnosis has been missed in about 70% of the cases⁴.

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death in the United States⁵. In a study conducted by Keeling in children aged 2-20, it was found that, the commonest causes of sudden natural death with recognized disorders were

congenital heart disease, asthma, and epilepsy but among apparently healthy children, the leading cause was infection⁶.

Justification:-

Sudden natural death is unexpected and efforts should be exerted to verify the reasons through postmortem examination to identify the risk factors and hence apply preventive measures. Research in sudden natural death is scanty in our country and more researches are needed in this area.

The objective of this study was to determine the causes of sudden natural death in Khartoum Mortuary, and relate them to the age and sex of the victims

Methodology:

Study design:-

Descriptive, cross- sectional study of sudden natural death in Khartoum Mortuary, in 2007.

Settings:-

Khartoum Mortuary is located in Khartoum hospital premises, providing services to Khartoum a long with other states. The Mortuary conducts postmortem examinations to natural and un natural deaths.

Study population:-

All the records of sudden natural deaths during 2007 in Khartoum Mortuary (150) were enrolled in this study

Data collection and analysis:

Data were collected by a structured check list, and analyzed by the computer using SPSS software.

Results:

Table (1)

Age and sex distribution of the sample

Age/yrs	Sex		Total
	Male	Female	
40 and below	59	17	76 (50.1%)
Above 40	65	9	74 (49.9 %)
Total	124 (83%)	26 (17%)	150 (100%)

Table (2)
Causes of sudden natural death

Causes	Frequency	%
Respiratory causes	74	49.3
Cardiac causes	36	24.0
Gastrointestinal	23	15.3
Cerebral causes	06	4.0
Other causes	11	7.4
Total	150	100

Table (3)
Leading causes of sudden natural death

Causes	Age in years		Total
	40 and below	Above 40	
Pneumonia	24	6	30 (20%)
Myocardial infarction	5	21	26 (17.3%)
Tuberculosis	11	10	21(14%)
Liver disease	8	10	18 (12%)
Pulmonary embolism	5	8	13 (8.7%)
Upper air way obstruction	5	5	10 (6.7%)
Others	18	14	32 (21.3%)
Total	76	74	150(100%)

Table (4)
Other causes of natural sudden death

Causes	Age in years		Total
	40 and below	More than 40	
Vascular (thrombosis and hypotension)	4	2	6
Intercranial hemorrhage	2	3	5
Cardiomyopathy	4	-	4
Multi organ failure	2	2	4
Septicemia	3	-	3
Acute renal failure	-	2	2
Others	5	3	8
Total	20	12	32

Discussion:

In this study the deaths included were unexplained on which autopsies were carried out under the act 51, which is coated investigation of deaths in mysterious conditions.. Sudden natural death in the young is slightly higher than the older age group (50.1%).According to the results of this study males are dominating (83%) the sudden natural death (Table1).

The causes of natural death in relation to body systems as a result of this study were respiratory, cardiovascular, gastro intestinal and cerebral (Table2). These findings are not in line with the morbidity and mortality reports in the USA in which the causes were cardiovascular followed by respiratory³.

Among the single leading causes of death presented in table (3), pneumonia was the first (20%), followed by myocardial infarction (17.2%), tuberculosis (14%). The least causes were dominated by vascular causes (table 4).These findings were not in agreement with the literature in which myocardial infarction is the leading cause (57%) of sudden natural death followed by pulmonary embolism².

Keeling found that the leading causes in children aged 2-20 years were congenital disorders followed by asthma and epilepsy¹. In Sudan and due to socio-cultural reasons most of such deaths were released without autopsy which may be one of the factors that explains the variation of these results with the literature.

This study highlighted the importance of TB as the third cause of sudden natural death which shows that many patients with TB remained undiagnosed and continued spreading the disease in the community.

Conclusion:

The causes of natural sudden death were different from the western countries and they were ranked as follow: Respiratory, cardiac, gastro intestinal and cerebral. The most single leading causes were pneumonia and Myocardial infarction.

The natural sudden death in the young age group (40 years and below) was slightly higher compared to the old age group, and males were dominating.

The study recommended that special emphasis should be put on respiratory diseases specially pneumonia and Tuberculosis, besides myocardial infarction as leading causes of sudden natural death. Appearance of TB as the third cause of sudden natural death rings the bell to the presence of a huge number of latent TB cases in the community and this emphasizes the importance of strengthening the control efforts against TB.

The study recommended further studies in sudden natural death in the country.

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