Leading causes of death for patients admitted to the Al-Sadder teaching hospital since 2006 to June 2012 in Miasn providence / Iraq

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Abstract :

Objectives : This study presents data on the major leading causes of death in the Al- Sadder teaching hospital in hospital deaths since 2006 to 2012 by age, sex and the burden of the both communicable and non-communicable diseases . Leading causes of infant mortality , violence and accidents homicide ,burn all were excluded .

Subjects and Methods: Prospective, analytical cohort study dealing with major leading causes of death in hospital, inpatient mortality for 1710 deaths registration for the period (2006 – 2012) In Al-Sadder teaching hospital /Misan province . Data in this study are based on information from . local vital statistic , patients clinical reports discussed in a weekly death coherence and death certificate for all deaths included. Inclusion criteria (death registration at hospital in-patient, both sexes , they were separated in tow group . first group age 1 to 15 year old , the other group age 16- to 60 and above year) . The exclusion criteria (below one year , death due to violence , road traffic accidents , burns, natural disasters and homicide).

Results: From (1710) deaths registered in AL- sadder teaching hospital in periods, of seven years since 2006 to June 2012, it was found (665) case (38.8%) were pediatrics; and (1055) deaths (61.2%) were adults, from all age groups females where (1058) deaths (62%) and the males were (652) case (38%). The most common causes of death in this study (look at table 1). The cerebra-vascular accidents (C. V. A) (263) cases about (15.38%). Coronary artery disease (241) case about (14.69%); septicemia (septic shock due to multiple causes) 233 cases (about 13.62%). Chronic renal failure (163 cases) about (9.59%).

Conclusions: The top 10 leading causes of in hospital death in this study , All age groups (CVA 15.4% , CAD 14% , Septicemia (septic shock) 13.6% , CRF 9.6% ,CHF 8.59%, GE 8.3 %,Pneumonia 3.74%, Malignant neoplasm 3.2% ,COPD

3.09%. DM 2.39%) totally represent 52.6% of all deaths In adults (C.V.A 15.3 %, C.A.D12%, C.R.F 11%, C. H. F 8%) Represent about 46% of total in hospital deaths & 75.5% of adult deaths. In pediatric (Septicemia 12% , G E 8.3% , Pneumonia 3% , R D S 2%) represented About 25% of total deaths, & 64% of pediatrics deaths.(Look to tables 3, 4)

.Key : Leading causes of death ,in-hospital ,Al-Sadder teaching hospital ,Misan province

Introduction:

Statistic among cause of death ,which are the oldest medical statistic available, provide information on development over time and differences in causes of death between different states. These statistic play a key role in the general data based system relation to the state of health in the any country [1]. Measuring how many people die each year and why they died is one of the most important means – along with measuring how diseases and injuries are affecting people , for assessing the effectiveness of a country's health system. Cause-of-death statistics help health authorities determine the focus of their public health actions. They may be used to determine which preventive and medical curative measure or which focused in research might increase the life expectancy of the population .

Although we all be familiar with major causes of death in our own countries , it is ,also interesting to see what causes of death elsewhere. Circumstances surrounding death have changed drastically over the past 50 years. Before the second half of 20th century most people died at home unless requiring immediate hospitalization .it was unusual for them to be seen by medical professional at the time of death.

According to a new study, on the global health, the world's leading causes of death in 2006[2], were ,heart diseases & stroke, regardless of countries incomes. However the study shows other leading causes of death differed depending on the countries in come. The study shows that one in three deaths was due to communicable diseases, nutritional deficiencies, & health problems in pregnant women, new mothers fetuses, or new-born More than half (52%) of all deaths in low-income countries in 2010 were caused by conditions, which include communicable diseases, maternal causes, conditions arising during pregnancy and childbirth, and nutritional deficiencies. [3,4] By contrast, less than 7% of deaths in high-income countries were due to such causes. Lower respiratory infections were among the leading causes of death across all income groups. Non-communicable diseases (NCDs) caused 70% of deaths globally, ranging from 37% in low-income countries to 88% in high-income countries.[5,6]

All death should be registered according to law. However, registration is not universal and death certificate is not accurate. mortality statistics is an area that should , receive a high priority in short- and medium- term plans..The crude death rate was estimated to be 10.6 per 1,000 population in 1997.in Iraq state. The ministry of health (MOH) reports the leading causes of death for age groups 5 years and over, (cardiovascular diseases, cancer, renal diseases, respiratory diseases, and diabetes). For age groups under 5 years ,(diarrheal diseases, respiratory infections, other communicable diseases, and congenital malformations represent major causes of death [5] .There is clear evidence that cardiovascular diseases have been the leading cause of death since 1970s. Major achievements were made in reducing child mortality during the sixties and seventies, the infant mortality rate (IMR), fell from about 117 per 1,000 live births, in 1960. to 90 in 1970, 80 in 1974, to around 40 deaths per 1,000 live births in 1989. and about < 40 per 1,000 live birth at 2006.[5,6]

Subjects and Methods: In hospital mortality registrations for 1710 deaths ,in AL-Sadder teaching hospital for 7 years ,from 2006-2012 [7]. Prospective, analytical cohort study dealing with major leading causes of death in hospital, inpatient mortality for 1710 deaths registration for the period (2006 – 2012) In Al-Sadder teaching hospital /Misan province .The data in this study are based on information from . local vital statistic , patients clinical reports discussed in a weekly death conference and death certificate for all deaths included. Inclusion criteria (death registration at hospital in-patient, both sexes , they were separated in tow group . first group age 1 to 15 year old , the other group age 16- to 60 and above year) . The exclusion criteria (below one year , death due to violence , road traffic accidents , burns, natural disasters and homicide). for each year through study ,12 leading causes of death for both sexes and age group included in the study .also we calculate for each year 4 major causes of death for pediatric and adult for both sexes, last we summarized the major 12 leading causes of death for 7 years for both sex, and compare the result with figure available nationwide and international studies. There wasn't previous local studies for comparisons , also limited information are available in Iraq regarding the causes of death especially in pediatric age group mortality for comparison . The vital registration system is deficient in its coverage, particularly from rural areas where access to health services is limited. so that we depends on WHO reports [1,2,3,4..5.6.] , Iraqi ministry of health (MOH) statistic for same years of study[8,9,10] .All meaningful comparisons between national and international studies should be made using the same data source and year. The most reliable source for International comparisons is

the World Health Organization because it is standardized for cross cultural comparisons. It is also reviewed annually, which often makes it more current than individual country data that can take years to compile. The WHO data includes individual country "projections," that are calculated based upon an annual consultation with each country before it is published. There are a lot of published studies about mortality in Iraq ,but most of these studies dealing with civilian causalities and violence during and after war.[11,12,13].

Results :

From (1710) in hospital deaths in AL- Sadder teaching hospital for 7 year periods, from 2006 to June 2012 [14] , it was found (665) case (38.8%) were pediatrics; and (1055) deaths (61.2%) were adults, from all age groups females where (1058) deaths (62%) and the males were (652) case (38%) [15]. The most common causes of death in this study (look at table 1).

Table (1). The most common (12) leading causes of death in 1710 inpatients admitted to Al -Sadder –Teaching Hospital In Misan From 2006 June 2012 inclusive No. : 1710 mortality (both sexes & all age groups).

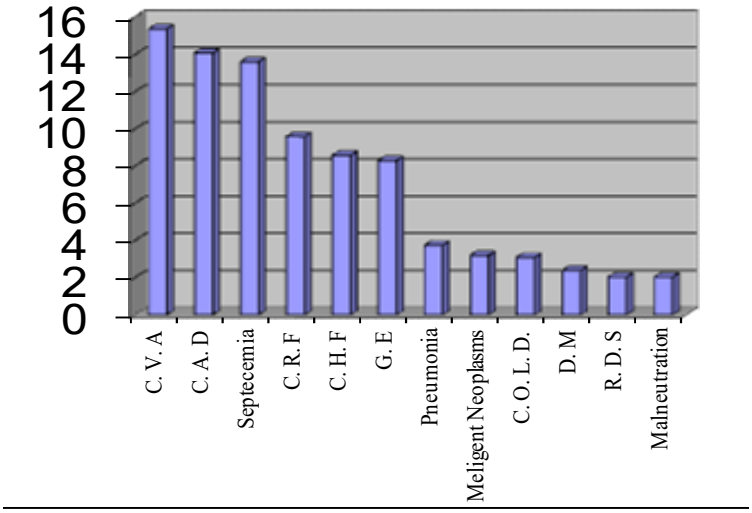
No.	Cause of Death	Total No.	Percentage %
1	CVA	263	15.38
2	CAD	241	14.09
3	Septicemia (Septic shock)	233	13.62
4	CRF	133	9.59
5	CHF	147	8.59
6	GE	142	8.3
7	Pneumonia	64	3.74
8	Meligent Neoplasms	55	3.2
9	COPD	53	3.09
10	DM	41	2.39
11	RDS	35	2.04
12	Malneutration	35	2.04

CVA= Cerebrovascular accident , CAD= Coronary artery disease ,CRF= Chronic renal failure ,COPD= Chronic pulmonary disease ,DM =Diabetes mellitus , RDS= Respiratory distress syndrome, IHD= Ischemic heart disease

The cerebra-vascular accidents (CVA), (263) cases about (15.38%). Coronary artery disease(CAD), (241) case about (14.69%); septicemia with septic shock (multiple causes) 233 cases (about 13.62%). Chronic renal failure (163 cases) about (9.59%). The 12 leading causes of death, both sexes and all age group, through the 7 years of study. The rank of order of 12 leading causes of death (See Table (1) and Figure (1) CVA (15.38%), CAD (14.09%), septicemia (15.62 %), CRF (9.59%), CHF (8.59%). GE (8.3) , Pneumonia (3.74%) ,Cancer (3,2%), COPD (5.09%) , DM (2.39%), RDS (2.04%),and malnutrition (2.04%). The above (4) causes were leading causes of death in all age group, (CVA , CAD, septicemia , and CRF) . Acquired heart diseases (CAD, CHF , cardiomyopathy) were considered the first leading cause of death in all age groups. Acquired heart diseases were (289) cases, about (22.7%).

The most common leading cases of adult were (look - table 2),C.V.A (No. 262 (15.32%); C.H.F (No. 136 (8%).

Fig. 1 The Most Common (12) Leading Causes of Death from 2006 to june 2012 No.1710(both sexes & all ages)



The most common leading cases of pediatrics (look - table 3); septicemia (multiple causes) No. 206 (12%), [16] GE (No. 142 (8.3%); pneumonia No. 45 (3%), RDS No. 33 (2%).{Look Table (3) . Fig (2)}. The tendency of changes in pattern of death through the 7 years frame 2006-2012 for both sexes and pediatric and adult age group (Look (Table 4).

The above (12) common causes of death (Table 1) constitute 86% of whole in hospital death , the reminder 14% includes other rare causes Congenital anomalies, mala-absorption , kala azar , respiratory failure, pulmonary edema , hypertension , hepatic failure, liver cirrhosis, meningitis , Encephalitis.).

Discussion:

The (12) leading causes of in hospital death were found In this study (Table 1). most of these causes are relatively considered preventable by preventive measures and medical intervention[13] cerebrovascular accidents. Coronary artery disease [14,15],

Table (2) . The most common (4) leading causes of death in age group 16 - 60 years old and above from 2006 - June 2012 of Total No. : 1710 mortality Adult age group No. : 1045 (61.2%)

No.	Cause of Death	Male		Female		Total No.	
		No.	%	No.	%	No.	%
1	CVA	168	61	94	39	262	15.32
2	CAD	172	68.5	99	31.5	251	11.7
3	CRF	89	46.6	52	53.4	191	11.2
4	CHF	104	76.4	32	23.6	136	8

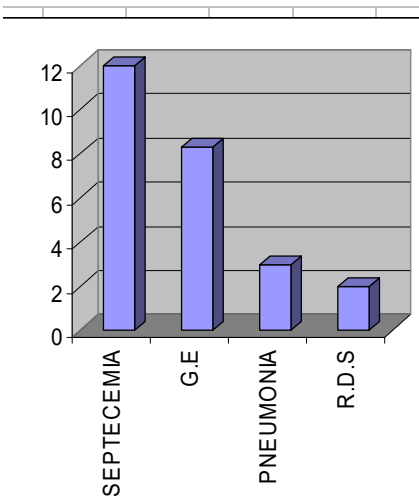
C. A. D - 241 (14.09%) is the second most common cause of death, while heart diseases (I. H. D. , vascular heart disease, cardiomyopathy, congenital heart disease, No. : 397 (23.2%) , so heart disease is the most common cause of death. Acquired heart disease No : No: 380 (22.7%) is a considered the commest cause of death. Septicemia ,infectious diseases , gastroenteritis, pneumonia , COPD, malnutrition, hypertension & acute respiratory diseases [16]. From this study , the most common leading cases in children although most of infectious disease practically referred to infections hospitals it was found that septicemia (113) cases (12%) is the common causes of death it is clear from this study that septicemia ,(multiple causes, gastroenteritis, acute respiratory tract infections, pneumonia) mostly in children with malnutrition)

Table (3). The most common (4) leading causes of death
in age group 1 - 15 years old from 2006 - June 2012
in-patients mortality
Total No. : 1710 mortality
Pediatric age group No. : 665 (38.8%)

No.	Cause of Death	Male		Female		Total No.	
		No.	%	No.	%	No.	%
1	Septicemia	113	55	93	45	206	12
2	GE	78	55	64	45	142	8.3
3	Pneumonia	28	62	17	38	45	3
4	RDS	16	48.5	17	51.5	33	2

From total deaths (1710 , (665 38.8) death in age 1-15 year old . Table 4 shows 4 major causes of deaths in children, about (55,125 %) , while deaths in female was (44.875 %) death in boys significantly more than girls for about ,10.25 %) *(p value > 0.001)*, this in contrast of believes that boys have more care from family than girls. especially in rural area .Adult mortality significantly more than pediatric (22.4 %) , total adult deaths 1046 (61.2%) , the reasons for that under estimation of death in children most of infections causes referred to infections hospital and infants mortality not included in this study. The most common leading causes of in hospital death in adult age group (16 - 60 years & above) [17], The cerebrovascular accidents is the second most common causes of death in adults (Look Table 2) ,

Fig.(2)The Most Common (4) Leading Causes of Death in children
from 2006 to june 2012 No.665 (both sexes . 1-15 years age)



Total death in male adult (63.125%) while in female total death (36.875%) . Female live longer than male *(p value >0.2)* , consistence with increase life expectancy in female in Iraq state (Look table 5).

Table (5)In Iraq life expectancies (years) 1990-2010 [10]

sex	1990	2010	Changes %
Men	69.4	70.6	1.73
Women	70.4	71.4	1.42

from years 2006- 2012 it was found that the malignances (indult , and congenital malformations in pediatric steadily increasing as a cause of death. also we observed that death due to CVA and CAD increased in winter time from November-January, this seasonal variations need to be studied need to be studied. [18].

Table (4) The most common (4) causes of death in age group (1 - 15 year) , and age group 16 and above year old , old in sexes in years 2006 to 2012 .

Year 2006 Total No. (254) age 1-15 years No 118 (46.4 %)							
Rank	Cause of death	Male		Female		Total No	
		No.	%	No.	%	No.	%
1	RDS	12	10.2	15	12.7	27	22.8
2	GE	11	9.3	12	10.2	23	19.5
3	Septicemia (septic shock)	8	6.8	15	12.7	23	19.5
4	HF	3	2.5	4	3.4	7	6.0
Year 2006 Total No. (254) age 16 - 60 and above No. (136) (53.6%)							
1	CAD	19	16	26	74	45	33
2	CVA	18	15.3	11	38	29	21.3
3	CRF	11	9.3	7	39	18	13.2
4	CHF	8	6.8	2	20	10	7.4
Year 2007 Total No (242) age (1- 15 Y) No 125 (51.6%)							
1	Septicemia (septic shock)	18	14.4	12	40	30	24
2	GE	11	8.8	13	54.2	24	19
3	Pneumonia	7	5.6	2	22.3	9	7.2
4	RDS	4	3.2	2	33.3	6	8.4
Year 2007 Total No. (242) age (16-60 and above Y) No.117 (48.4)							
1	CVA	25	21.4	17	14.5	42	35.9
2	CAD	13	11.1	7	5.9	20	17
3	CRF	11	9.4	9	7.7	20	17

4	CHF	9	7.7	11	9.4	11	9.4
Year 2008 Total No. (267) age 1-15 7 No. (114) (42.7 %)							
1	Septicemia (septic shock)	33	29.0	14	12.3	47	41.2
2	GE	17	15.0	11	9.6	28	24.5
3	Pneumonia	5	4.4	7	6.0	12	10.5
4	Congenital anomalies	4	3.5	2	1.8	6	2.5
Year 2008 Total No. (267) age 16- 60 and above Y No. (153) (57.3%)							
1	CVA	40	26.0	7	4.6	47	30.7
2	CAD	30	19.6	10	6.5	40	26
3	CHF	21	14.0	2	1.3	23	15.0
4	CRF	10	6.5	6	4.0	16	10.4
Year 2009 Total No. (371) age 1-15 y No. 119 (32.1 %)							
1	Septicemia (septic shock)	16	13.4	14	11.8	30	25.2
2	GE	12	10.0	6	5.0	18	15
3	Mal-absorption	7	1.7	8	6.7	5	12.6
4	Congenital anomalies	6	5.0	2	1.7	8	6.7
Year 2009 Total No. (371) age 16- 60 and above Y No. 252 (67.9 %)							
1	CVA	38	15.0	18	7.14	56	22.2
2	CAD	30	12.0	20	8.0	49	19.8
3	CRF	29	11.5	20	8.0	47	19.4
4	CHF	25	10.0	5	2.0	47	12
CAD= Coronary heart disease CHF =Congestive heart failure . CRF=Chronic renal failure, GE= Gastroenteritis							
Year 2010 Total No 233 age 1-15 Y NO 100 (43%) Continue Table							
Rank	Cause of death	Male		Female		Total NO	
		No,	%	No.	%	No.	%
1	Septicemia	13	13	11	11	14	14
2	GE	13	13	8	8	21	21
3	Pneumonia	11	11	5	5	16	16
4	Malnutrition	2	2	4	4	6	6
Year 2010 Total No. 233 age 16-60 and above Y No. 133 (57%)							
1	CAD	34	25.6	14	10.5	28	36
2	CRF	14	10.5	5	5.8	19	22.5
3	CHF	13	9.8	9	6.8	22	16.5
4	CVA	10	7.5	20	15.0	30	14.3
Year 2011 Total No. 211 age 1-15 Y No. (60) (28.4%)							
1	Septicemia	17	28.3	17	28.3	38	56.5
2	GE	10	16.7	6	10	13	26.6
3	Pneumonia	3	5	3	5	5	10
4	Mal-absorption	1	1.7	3	5	4	6.6
Year 2011 Total No. 211 age 16-60 and above Y No. (151) (71.6%)							
1	CVA	20	13.2	10	6.6	30	19.9
2	CAD	20	13.2	8	5.3	28	18.5

3	Acute RF	15	10.0	8	5.3	21	14
4	CRF	13	8.6	5	3.3	16	10
Year 2012 No. 125 age 16-60 and above Y No. 103 (82.4%)							
1	CVA	17	16.5	11	10.7	28	27.2
2	CRF	13	12.6	4	3.9	21	20.4
3	CAD	7	6.8	4	3.9	17	16.5
4	Cancer	6	5.8	7	6.5	13	12.6
CAD= Coronary heart disease CHF =Congestive heart failure . CRF=Chronic renal failure, GE= Gastroenteritis							

Conclusions:

The most common (4) leading causes of death in this study , All age groups (CVA 15.4% , CAD 14% , Septicemia 13.6% , CRF, 9.6%) totally represent 52.6% of all in hospital death studied . In adults (CVA 15.3 %, CAD 12%, CRF 11%, CHF 8%) Represent about 46% of total in hospital deaths & 75.5% of adult deaths. In pediatric (Septicemia 12% , G E 8.3% , Pneumonia 3% , R D S 2%) represented About 25% of total deaths , & 64% of pediatrics deaths.(Look to tables 1, 2,3 ,4). All above causes & other 12 leading causes of deaths, where considered preventable or potentially preventable or may be considerable reduction in mortality by proper medical intervention [20] .1t was found that there is considerable changes in mortality [19] , CVA and CAD are increase and predominant, causes of death due to cancer increase too , death is more in male compare with female in both pedantic and adult age group. The common causes of death in this study, since 2006-2012. As follows: CAD increase from 14% to 17% *(p>0.2)* CVA increase from 11.4 % to 22.4 % *(p> 0.01*) CRF increase from 8.6%to 13.6 % *(p>0.3*) ,COPD ,increase from 2.6%to 6% , Cancer increase from 2.3 to 10.4%. *(p>0,01)* It was found that no considerable changes in the deaths due to congestive heart failure, Gastroenteritis, and septicemia. Comparison of major causes of death in this study, in Iraq state, worldwide, low-income & high-income countries [21] , & USA [22] Our results of major causes of deaths simulate to the major causes of death in IRAQ state & low-income countries [23,24].

الاسباب الرئيسية للوفيات للمرضى الراقدين في مستشفى الصدر التعليمي و للفترة من 2006 الى 2012

لجميع الفئات العمرية و لكلا الجنسين في محافظة ميسان

د. خالد عبيد محسن / كلية الطب / جامعة ميسان

الاهداف الرئيسية : دراسة الاسباب الرئيسية للمرضى الراقدين في مستشفى الصدر للفترة من 2006 الى 2012

ملخص الدراسة : دراسة تحليلي مقارنة ل 1710 حالة وفاة للمرضى الراقدين في مستشفى الصدر خلال 7 سنوات و حددت الدراسة فئتين عمريتين الفئة العمرية الاولى من إلى 15 سنة العدد (665) حالة النسبة 38.4 % وفيات الفئة العمرية الثانية من 16 الى 60 سنة العدد (1046) النسبة 61.2 %حالة وفاة فما فوق و لكلا الجنسين مقارنة بالأسباب الرئيسية في احصائيات منظمة الصحة العالمية (WHO) و وزارة الصحة العراقية قسم الاحصاء الاحيائي و دراسة دول الجوار.وكان ملخص الاستنتاجات الاسباب الرئيسية لكلا العمرين ما يلي : امراض السكتة الدماغية 15.38 % ، الشرايين التاجية 14.09% ، التسمم الجرثومي للأطفال 13.62% ،الفشل الكلوي المزمن 9.59%، عجز القلب الاحتقاني 8.59%،التهاب الامعاء الحاد 8.3%، ذات الرئة 3.74%، الاورام السرطانية 3.2%، الالتهابات الرئوية المزمنة 3.09%،متلازمة عسر التنفس للاطفال 2.04% ،امراض نقص و سوء التغذية 2.04%ز الدراسة تم استثناء الوفيات بسبب حوادث الطرق و العنف و الارهاب و وفيات الخدج) كذلك حددت الراسة الاسباب الرئيسية لكلا الفئتين و خلال سنوات الدراسة

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