Patterns of labour and fetal outcomes of post-term pregnancy among women give births in Mukalla maternity hospital, Hadhramout(Yemen)

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Abstract:

Objectives: To describe the patterns and fetal outcomes of post term pregnancyamong women give their births in Al-Mukalla maternity hospital during the year 2013. .

Subjects and Methods: It is a retrospective descriptive case series study in the period of first of January 2013- 31 December 2013 in Al-Mukalla maternity Hospital, Mukalla city, Yemen. Medical files of 147 casesof post-term pregnancy were studied. Seven cases were excluded due to lack of data in their files. The independent variables are age and parity, the outcomevariables are labour patterns (onset and mode of labour) and fetal outcomes (alive, intrauterine fetal death, stillbirth and neonatal death).

Results: A total of 147 post-term pregnant women (1.7%) out of 8630 pregnant women gave births in Mukalla Maternity hospital during the study period. Seven cases were excluded from the analysis due to lack of completed data; so data of 140 cases were analyzed and presented in this paper. The mean age of the studied women are 26.9 (±5.0 years).

Atotal of 114 out of 140 women underwent spontaneous labour (81.42%) and induction of labour was done in 20 women (14.28%) while in 6 women (4.30%) an elective C/S is done. Regarding mode of delivery a total of80 women (57.1%) underwent normal vaginal delivery (NVD) and 60 women (42.9%) underwent cesarean section (C/S. Fetal outcomes are represented in a 124 alive babies (88.57%) , nine neonatal deaths (6.42%) , six stillbirths (SB) (4.29%) and only one intrauterine fetal death (IUFD) (<1%).

Conclusions: Spontaneous labour achieved in the majority of post term pregnancy , post term pregnancy associated with higher rate of failure of induction as well as increase rate of C/S. The neonatal death is the major cause of death of babies of women with post-term pregnancy.

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نوع الولادة ومخرجات الطفل في الحمل متجاوز التمام من بين الحوامل الذين حظروا للولادة في مستشفى المكلا للامومه والطفوله حضرموت اليمن

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الملخص:

الهدف: وصف نوع الولاده ومخرجاتها على الطفل الوليد في الحمل المتجاوز التمام بين الحوامل الذين حظروا الى مستشفى المكلا للولاده خلال عام ٢٠١٣م.

أسلوب الدراسة : دراسة وصفية تمت في الفترة من ١-١-٢٠١٣-٣١-١٢-٢٠١٣ في مستشفى المكلا للامومه والطفوله مدينه المكلا اليمن.ملفات ١٤٧ حالة حمل متجاوز التمام تم دراستهم ، ٧ حالات تم أستثنائهم لعدم كفاية المعلومات بالملف.المتغيرات التي تم دراستها هي العمر ، عدد مرات الولادة, مخرجات الولاده (ظهور علامات الولادة ، نوع الولادة) ، مخرجات الطفل (بصحة جيدة ، متوفي في البطن قبل ظهور علامات الولادة ، متوفي اثناء عمليه الولادة ، متوفي في الاسبوع الاول من الولاده).

النتائج: ١٤٧ حالة حمل متجاوز التمام من ٨٦٣٠ حالة حمل حضروا للولاده في مستشفى المكلا للامومه والطفوله خلال عام ٢٠١٣بنسبة (١,٧٪).٧ حالات تم استثنائهم. معلومات ١٤٠ حالة تمت دراستها وتحليلها في هذا البحث.معدل العمر في الحوامل متجاوز التمام كانت (٢٦,٩٪).من ظمن ١٤٠ حالة ١١٤ حالة ظهرت عليهم علامات الولادة تلقائيا بنسبة (٨١,٤٢٪) و٢٠ حالة بنسبة (١٤,٢٨٪) تم تحفيز الولادهبالادويةبينما ٦ حالات بنسبة (٤,٣٪) خضعوا لعمليه قيصريه بارده .اما عن نوع الولاده فأن ٨٠ حاله بنسبه (٥٧,١٪) ولادة طبيعية بينما ٦٠ حالة بنسبه(٤٢,٩٪) ولدوا عمليه قيصريه.

مخرجات الطفل الوليد عند حوامل متجاوزي التمام كانت ١٢٤ طفل ولدوا بصحه جيده بنسبة (٨٨,٥٧٪) ، و٩ حالات وفاة في الاسبوع الاول من الولادة بنسبه (٦,٤٢٪) اما حالات الوفاة اثناء الولاده كانت ٦ حالات بنسبه (٤,٢٩٪) وحالة وفاة واحده في البطن قبل ظهور الولادة بأكثر من ٢٤ ساعة بنسبه (<١).

الاستنتاج: معظم حالات الحمل متجاوز التمام تظهر فيهم علامات الولادة تلقائيا كما ان هذا الحمل مصاحب بنسبه عاليه من فشل الولادة في حاله التحفيز دوائيا .نسبه العمليات القيصريه في الحمل المتجاوز التمام مرتفعهكما انه مصاحب بارتفاع وفيات الاطفال (وفيات خلال الاسبوع الاول).

المفتاح: حمل متجاوز التمام ، مخرجات الولادة ، وفيات الاطفال).

Introduction:

Sickle cell anemia is an inherited form of anemia. It is a condition in which there aren't enough healthy red blood cells to carry adequate oxygen throughout the body.(1) Normally, the red blood cells are flexible and round, moving easily through the blood vessels. In sickle cell anemia, the red blood cells become rigid and sticky and are shaped like sickles or crescent moons. These irregularly shaped cells can get stuck in small blood vessels, which can slow or block blood flow and oxygen to parts of the body.(1) Sickle cell anemia is a genetic disorder of the blood caused by a single nucleotide alteration (point mutation) in the β globin gene, it occurs in individuals who have inherited two mutant genes (one from each parent) that code for the synthesis β globin chains.(2) "If one parent has sickle-cell anemia (SS) and the other has sickle-cell trait then there is a 50% chance of a child's having sickle-cell disease and a 50% chance of a child's having sickle-cell trait. When both parents have sickle-cell trait a child has a 25% chance of sickle-cell disease, 25% will not carry any sickle cell alleles, and 50% will have the heterozygous condition"(3) The most common clinical manifestation of sickle cell disease is vaso-occlusive crisis. A vaso-occlusive crisis occurs when the microcirculation is obstructed by sickled RBCs, causing ischemic injury to the organ supplied and resultant pain. Pain crises constitute the most distinguishing clinical feature of sickle cell disease and are the leading cause of emergency department visits and hospitalizations for affected patients.(4, 5)

The diagnosis of sickle cell disease is based on the unambiguous identification of the Hb S mutation. Electrophoretic tests are the most preferred tests that are performed, the second preferred test that can be used is the sickle solubility test , besides the diagnosis can be confirmed with Sickling of the red blood cells in blood film .(6) The goal of treatment is to manage and control symptoms and to limit the number of crises. Patients with sickle cell disease need ongoing treatment, even when not having a crisis. Patients with this condition should take folic acid supplements. Folic acid helps to make new red blood cells. Treatment for a sickle cell crisis includes : Blood transfusions (may also be given regularly to prevent stroke),analgesics and Plenty of fluids.(7) Sickle cell anemia affects millions throughout the world, In the Unites States , it affects around 72,000 people, most of whose ancestors come from Africa. The disease occurs in about 1 in every 500 African-American births and 1 in every 1000 to 1400 Hispanic-American births(8).In 2010, there were about 29,000 deaths attributed to sickle cell disease globally.(9) In Saudi Arabia about 4.2% of the population carry the sickle-cell trait and 0.26% have sickle cell disease and he highest prevalence is in The Eastern Province where approximately 17% of the population carry the gene and 1.2% have sickle cell disease.(10) A study in Yemen determined that 80% of patients had family history of the disease, 73% patients had history of parental consanguinity and 20.7% of death of relative(s) due to the disease; 5.4% patients were older than 30 years of age.(11). A new study sought to assess estimations of the expected increase of the burden between 2010 and 2050, Globally, they estimated the overall number of births affected by SCA between 2010 and 2050 to be 14,242,000, with the annual number of SCA births increasing by one-third in that time and potentially doubling the number of SCA cases over the next 40 years.(12)

However, to our knowledge, epidemiology of sickle cell anemia among children has not been studied yet in the study area Al-Mukalla district Hadhramout governorate, Yemen. Therefore, the objective of our study was, to determine the characteristics of the disease (SCA) among children < 15years admitted to the pediatric wards in Al-Mukalla hospitals during the study period from January 1st 2012 to December 31st 2014.

Materials and methods:

The study was a retrospective descriptive study, relied on data that had been collected through medical records. The study was carried out at Al- Mukalla District hospitals. Al-Mukalla district is located on Hadhramout coast of the Arabian Sea, which stretches on 450 kilometers in the South of Yemen. It has about 196187 inhabitants [12]. At present In Al-Mukalla district there are 2 major referral hospitals (University hospital for Gyn. Obst. and pediatric Hospital (UHGOP) and Maternity and Childhood Hospital(Al-Mukalla MCH) providing health services for children from the following geographic areas (Hadhrmout governorate including Al Mukalla district ,Shabwa and Al-Mahra governorate). Medical files of patients (149) with sickle cell anemia (under 15 years of age) who were admitted in the period from 1st January 2012 to 31st December 2014 were analyzed.

Their clinical features, diagnosis on admission, investigations done, mode of treatment given and subsequent outcome of admissions were noted. Data obtained were analyzed using statistical package for social science (SPSS V 20). Frequencies and percentages were used to describe patients' characteristics for categorical variables and means ± SD for continuous and data was presented in tables.

Results:

Over the 3-years study period, there were 8172 admissions into UHGOP and Al-Mukalla MCH Hospitals from 1st January 2012 to 31st December 2014. Of these only one hundred frothy nine cases 149 (12.18%) were benign children below 15 years of age with sickle cell anemia (SCA), distributed as the following : 2728 patients registered in year 2012 of them only (50 SCA cases aged <15 years 1.83%) , 2742 patients in year 2013 of theme (43 SCA cases aged <15 years 1.57%) and 2702 patients in year 2014 of theme (56 SCA cases aged <15 years 2.07%). (Table1)

Table 1: Distribution of hospital admissions during year 2012-2014 at UHGOP and Al-Mukalla MCH hospitals.

YEAR	ALL ADMITTED CASES	FREQUENCY SCA CASES	PERCENTAGE
2012	2728	50	1.83
2013	2742	43	1.57
2014	2702	56	2.07

Among the total 149 SCA patients, 56 (37.9%) were males and 93 (62.1)%) were females aged < 15years with mean age: 7.6 ± 2.8 years. females were more registered than males and the age group of 5– <10 years was most affected 61(40.7 %) followed by age group < 5 years 54 (36.4%), and age group 10-<15 years 34(22.9%). The age and sex distribution of the SCA patients is shown in Table 2. With regarding to the area a high frequency of SCA patients is recorded from Hadhrmout governorate 66.7% (Al -Mukalla diatrict 54.3% and Hajr 12.4%) followed from Shabwah (24.9%), and from al-Mahra governorate only (8.4%) (Table 2). There were no deaths during the study period.

Table 2: Distribution of SCA cases admitted to at UHGOP and Al-Mukalla MCH hospitals (No 149).

Item	Frequency	%
Age group in years		
< 5	54	36.4
5 - <10	61	40.7
10 -<15	34	22.9
Mean age ± SD*	8.6 ± 2.8 years	
Gender		
Males	56	37.9
Females	93	62.1
Geographic area		
Hadhrmout governorate Al-Mukalla and Hajar)	99	66.7
Shabwa	37	24.9
Almahra	13	8.4

*** standard deviation**

Table 2 shows that the commonest cause of admission was painful crises for 102 patients (68.5%) (abdominal and skeletal pain 40.1% and 28.4% respectively), followed by anemia 87 (58.6%) for blood transfusion just to increase the Hb level. Other common events were infections among 77 (51.1%) ,jaundice 31 (20.8%), splenomegaly 22 (15.0%) hepatomegaly 19 (13.0%) and others (14 9.2%).

The results showed that 42 (27.9%) of cases with positive family history and 45 (30%) of cases with parental consanguinity. Table 2. Most patients were diagnosed by electrophoreses (45.6%), blood film (36.2%) and sickling test (18.2%). The principles of management are to give blood transfusions 73 (49%), to prescribe broad spectrum antibiotics 46 (30.9%) and to control pain 30 (20.1%).Table 2

Table 3: Clinical characteristics of SCA cases admitted to UH-GOP and Al-Mukalla MCH hospitals (N=149).

Characteristics	Frequency	%
Common causes for admission*		
Painful crises*	102	68.5
Blood transfusion	83	55.4
Infection (Fever for investigation)	77	51.1
Jaundice	31	20.8
Splenomegaly	22	15.0
Hepatomegaly	19	13.0
Others **	14***	9.2***
Family history for SCA		
Positive	42	27.9
Negative	107	72.1
presence of parental consanguinity		
Yes	45	30
No	104	70
Investigations done		
Electrophoreses	68	45.6
blood film	54	36.2
Sickling test	27	18.2
Type of treatment		
Blood transfusion	87	58.6
Antibiotics	46	30.9
Pain killer	30***	20.1***

***Skeletal (joints) + abdominal, ** Other complications of SCA including epistaxis, cough, diarrhea…) ***Most cases admitted to the hospital with more than one cause and given more than one treatment hence the % can not be summed to 100%, and the frequency adds up to more than the 149.**

Discussion:

This study was curried out to determine the characteristics of the SCA disease among children< 15years admitted to the pediatric wards in Al-Mukalla hospitals,

Data was collected from registered medical files that were unfortunately not completely filled by specialists, and the files were not put in chronological order ,so many difficulties were faced in the interpretation of the results due to undetailed history and clinical factures and complications which limit the study.

The present study revealed that SCA was more frequent in female patients (54.1%) than in male patients (45.9%) and this is not similar to a study carried out in Central and the Northwestern governorates of Yemen (11) and with other studies (14,15) in which SCA was found more frequent in males than females

Results showed that 27.9% of cases with positive family history of disease and 30% of cases with parental consanguinity, whereas the study conducted in Central and the Northwestern governorates of Yemen showed that 80% of the patients had family history of the disease and 73% patients had history of parental consanguinity (11). Our findings was also comparable with the other study (14)

The study revealed that, painful (vaso-occlusive) crisis (68.5%) was the most common cause of admission (68%) which is consistent with the previous study of Al-Ghazaly et al., (2012) in the South-Central and the Northwestern provinces of Yemen.(11) This result was also in agreement with the available data from Arab counters such as Saudi Arabia (16), Kuwait (17), and Sudan (18). As well as this is similar to studies carried out in other countries (19). Blood transfusions accounted for the second largest group of admissions (55.4%), followed by infection (51.1%), Jaundice (20.8%),Splenomegaly (15%) and Hepatomegaly (13%). In agreement with our results Teoh et al in his study among Australian paediatric population found that transfusion therapy ,infections and anaemic episodes accounted for the majority of planned admissions after the painful crisis (19). Bayoumi et al also observed in his study among Sudanese children that children presented mainly after the painful vaso-occlusive crisis with severe anaemia (for blood transfusion), hand and foot syndrome, fever, underweight, malnutrition and various infectious diseases. Moderately enlarged spleen liver were also observed (18).

In contrast to our findings Al-Ghazaly et al in his study in the South-Central and the Northwestern provinces of Yemen reported that, jaundice and infection were the most frequent features after the painful crisis. As well as splenomegaly, cholelithiasis, osteomyelitis, acute chest syndrome (ACS), osteonecrosis and stroke were also occurred (11). While Izuora et al in his study in Saudi Arabia found that hemolysis, infections and anemia were the most frequent features after the painful crisis (20),

Infection as an important cause of morbidity and hospitalization was reported by many studies. In the present study infection as the cause of admission was most frequent among a significant number of patients (51.1%), unfortunately, patients record not included any details about the nature of this infection. In contrast of our study , other studies included more details about SCA complications. One of these

complications was Acute chest syndrome as an important cause of hospitalization among their participants (11,17,21)

Acute chest syndrome (ACS) is a common cause of morbidity and mortality in children and adults with SCD.

Quite often, patients require ICU care with ventilation and an exchange blood transfusion (22,23). Bacteremia and other severe bacterial infections were relatively uncommon in this study, although reports from the US and elsewhere have emphasized the role of infections, especially pneumococcemia, in the morbidity and mortality of SCD in early childhood (24,25) .

Our study revealed that the age group between (5 - <10) years is the most affected age group, which is similar to finding of other studies (14) The most common used management among our sickle cell anemia patients were blood transfusion (49%), antibiotics (31%) and pain killers (20%) .Currently the study conducted in United States show that hydroxyurea and transfusion therapy are strongly recommended for many individuals with SCD (26).

Most patients (66.7%) were registered from Hadhramout followed from Shabwah and al-Mahra governorates. This does not indicate that the prevalence of SCA disease is higher in Hadramout governorate. It can be attributed to in-accessibilities to health care facilities

Conclusion:

Sickle cell anemia (SCA) was reported frequently in the age group of (5 - <10) years with high frequency in females than males. family history of disease and parental consanguinity were found among significant number of cases. Painful crisis, blood transfusions and infection were the most frequent features of SCA among the study population .

limitation:

Though retrospective studies are easy to handle, they have problems of providing incomplete data in some relevant variable. Data of this study was collected from registered medical files that were not completely filled by specialists, also the files were not put in chronological order ,so we recommend to offer more facilities in registration offices in the University Hospital and Al Mukalla M C Hospital .

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