A Four Years Records Analysis Of Non-Traumatic Gynecological Abdominal Emergencies In Mekelle Hospital, Mekelle, Tigray, Ethiopia During The Period Of February 2009 To February 2012

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Abstract: Back ground: Gynecological emergencies are common in women in the reproductive age group. The most common gynecologic causes of the acute abdomen are ectopic pregnancy, ovarian torsion,PID and tubo-ovarian abscess. The rate of ectopic pregnancies per 1000 reported pregnancies increased fourfold in the United States from 1970 to 1992. , the highest EP incidence rates were observed in African countries (between 0.5 and2.3% of live births) The proportion of all maternal deaths attributed to ectopic pregnancy, however, increased from 8 percent in 1970 to 11 percent in the 3-year period ending 1990 (konini and associates, 1997).Torsion of the adnexa is an infrequent cause of pain in the lower abdomen. However, torsion is a common gynecologic surgical emergency, with a prevalence of 2.7%. **Objectives** – To assess the magnitude and management outcome of non-traumatic gynecological abdominal emergencies in mekele hospital from February 2009 to February 2012. **Method** –institutional based retrospective cross-sectional record analysis. **Setting** – regional hospital in mekelle city126 non-traumatic gynecological abdominal emergency patients. **Results** – among 146 studied groups 126(86.3%) cards were available from this 60(47.6%) from mekele and 66(52.4%) were outside mekele,68.3% multigravida and the rest 31.7% primgravida. Pre operatively 69(54.8%) ectopic pregnancy, 32(25.4%) pelvic inflammatory disease, 12(9.5%), ovarian torsion,8(6.3%) Tubo ovarian abscess and 5(4%) others. Intra operatively 93.6% had the diagnosis and the rest 6.4% had different pre-operative diagnosis. Among 95 procedures done the majority of them 73.6%had no complication the rest 23.2%, 3.2% had mild and major complication respectively, all of them improved and discharged. **Conclusion and recommendation** –The prevalence of non-traumatic gynecological abdominal emergencies like ectopic pregnancy, tub ovarian abscess, pelvic inflammatory disease and ovarian torsion were 13.3% with delays hospital admition of 66.7% and preoperative diagnosis difference of 4.6% with 25.9% post-operative complication therefor early diagnosis and treatment, intensive history and physical examination in addition to some diagnostic tools and minimizing number of visitor in recovery rooms may help to reduces these complication

key words: Tubo-ovarain abscess, ectopic pregnancy,pelvic inflammatory disease

1-Introduction

Evaluation of a female patient who presents with an acute abdomen must always include surgical and gynecologic disorders. The most common gynecologic causes of the acute abdomen are ectopic pregnancy, ovarian torision,PID and tubo-ovarian abscess. The two general considerations in the surgical evaluation of these conditions are laparoscopic approach versus the traditional laparotomy and preservation of reproductive capability (1,2). The rate of ectopic pregnancies per 1000 reported pregnancies increased fourfold in the United States from 1970 to 1992. This increase was greater for nonwhite than for white women, and for both, the incidence increased with age. In 1992, there were 108,800 ectopic pregnancies in the United States—almost 2 percent of all pregnancies Importantly, ectopic pregnancy accounted for 10 percent of all pregnancy-related deaths (Koon in and colleagues, 1997)(2).Data on the incidence of EP and its trends are scarce in developing countries. In 1990, a review by Liskin reported an increase in the incidence of EP from the 1960s until the middle of the 1980s.In this review, the highest EP incidence rates were observed in African countries (between 0.5 and2.3% of live births) whereas low incidence rates were reported in Asia and the Middle East over the same period: 0.4%of live births between 1964and 1973 in India and about 0.6% of live births between 1976 and 1982 in Jordan (3, 4,5) Deaths from ectopic pregnancies in the United States decreased from a total of 63 in 1970, to 46 in 1980, and to 30 in 1987. The proportion of all maternal deaths attributed to ectopic pregnancy, however, increased from 8 percent in 1970 to 11 percent in the 3-year period ending 1990 (konini and associates, 1997).(4,6) Torsion of the adnexa is an infrequent cause of pain in the lower abdomen. However, torsion is a common gynecologic surgical emergency, with a prevalence of 2.7%. Treatment of adnexal torsion is considered an emergency because peritonitis and death can result. Any portion of the adnexa (tube or ovary) may undergo torsion It may occur in neoplastic ovaries or as a consequence of hyper stimulation (8). The incidence of adnexal masses was 2.3% in the pregnant population evaluated. In addition, the rate torsion of the adnexal mass was 1%, and the rate of malignancy was also reported as 1%.(7,8) Despite an increase in the number of effective broad-spectrum antibiotics, pelvic inflammatory disease (PID) and the complications arising from the disease continue to reach epidemic proportions into the1990s.Acute salpingitis and PID account for more than

350,000 hospital admissions and 150,000 surgical procedures per year .The annual costs associated with the disease are projected to reach $10 billion by the year 2000.In addition, some authors report that nearly one third of patients hospitalized for PID develop some degree of pelvic abscess. Of their sequel such as ectopic pregnancy, salpingitis isthmicanodosa, tubal infertility, chronic pelvic pain syndromes, and pelvic adhesions are other consequences of PID (9,10,11). Tubo-ovarian abscess (TOA) is the most serious cause of gynecological emergency in pregnancy and potentially life-threatening, with mortality rates as high as 8.6%.it may result whenever bacteria gain access to the upper female genital tract The rate of a TOA developing from typical PID has been reported to be between 1% and 4%.Tubo-ovarian abscess is usually a polymicrobial infection, whereas general pelvic infections may often be mono microbial (12) Success rates of CT –guided percutaneous drainage have been from 77% to 94% in recent studies, and this technique may play more of a major role in the future .Early drainage of abscess and irrigation via laparoscopy in addition to antibiotics achieved a success rate of 95% by Reich and McGlynn in recent series of 21 patients (10,13).

2- Significance of the study

This study was conducted with the aim of determining the magnitude, and management outcome of gynecological emergencies in Mekelle Hospital and compared it with other studies in Ethiopia and African countries, among the developed world. Since there is very little known about the general incidence and management out come in Tigray, this study is believed it will have epidemiological benefits and serve as baseline information for farther studies. The results of this research paper especially very important to the facility where it was conducted that is Mekelle Hospital to improve the quality of health care they provide and reduce adverse events affecting outcomes.

3-Literature review

Gynecological emergencies are common in women in the reproductive age group. It causes disability and distress and results insignificant costs to health services, estimated at over $880million in the USA (Mathias 1996). Consultations recorded in a UK general practice national database showed that the incidence and prevalence of chronic pelvic pain was similar to that of migraine, back pain and asthma, with monthly incidence and prevalence of 21.5/1000 and 1.58/1000 respectively(Zondervan 1999)(1,8) The incidence of adnexal mass in pregnancy requiring surgical intervention has been reported to occur in 1 in 81 to 2,500 pregnancies. When an adnexal mass is noted incidentally on ultrasound during pregnancy, the majority of small, simple cysts do not pose a risk to the pregnancy. Furthermore, most large or sono graphically complex masses spontaneously resolve, as reported by Bernhard and colleagues (10,11) Sexually transmitted diseases (STDs) have been reported at epidemic proportions in the United States, with the Centers for Disease Control and Prevention (CDC) estimating 19 million new infections each year. The incidence of chlamydia infections increased almost 6%, with 929,000 cases reported and 2.8 million new cases suspected annually. Gonorrhea incidence has decreased 70% since 1975, but is still estimated to occur in more than 60,000 women each year in the United States. For women, acute PID is the most common and important complication of STDs. Bell and Holmes in the 1980s estimated that 1 million women a year were treated for acute salpingitis in the United States, but recent estimates by Sutton and colleagues estimated a decrease in cases of PID to less than 800,000 per year and a 68% decrease in hospitalized PID from 1995 to 2001(11,12). About 250,000 to 300,000 women are hospitalized each year with a diagnosis of salpingitis or PID. The disease generates nearly 2.5 million visits to physicians, and an estimated 150,000 surgical procedures are performed for complications every year. According to Sutton and colleagues, the direct and indirect costs of PID and its squealed now total $2 billion and $10 billion in the United States, respectively. In terms of overall incidence, acute PID occurs in about 1% to 2% of young, sexually active women each year. PID is the most common serious bacterial infection in women age 16 to 25 years, and the resultant morbidity exceeds that produced by all other infections combined for this age group.(8,9) The incidence of acute PID decreases with advancing age. Adolescent girls are at significant risk for development of acute salpingitis. Weston reported that nearly 70% of women with PID were younger than 25 years of age, 33% experienced their first infection before the age of 19, and 75% were nulliparous. The risk for development of acute PID in a sexually active adolescent female patient was 1:8, whereas the risk was 1:80 for a sexually active woman 24 years of age or older. Several reasons have been suggested for this increased risk. The two microorganisms most commonly considered to be the inciting agents in cases of PID (9) The incidence of ectopic pregnancy for nonwhite women is higher in every age category compared with that for whites, and this disparity increases with age. Overall, in 1989 a nonwhite woman had a 1.4 times increased risk for ectopic pregnancy compared with a white woman. Because of the increasing use of in-office medical therapy for ectopic pregnancy reliable data on the actual number of ectopic pregnancies in the United States are not available after 1990(1,3,4) In most of Europe and North America, the incidence of EP has tripled over the past 30 years, and is currently estimated at about 2% of live births. In Norway, Storied et al. found that the incidence of EP increased from 1.4 to 2.2%of live births between 1976 and 1993 . In England and Wales, the incidence of EP increased by a factor of five between 1966 and 1996 (from 0.3%to 1.6% of live births)(3,6) Deaths from ectopic pregnancy in the United States decreased from a total of 63 in 1970, to 46 in 1980, and to 30 in 1987. The proportion of all maternal deaths attributed to ectopic pregnancy, however, increased from 8 percent in 1970 to 11 percent in the 3-year period ending 1990 (Koon in and associates, 1997(4,8)

4-Objective of the study

4.1 General objectives

To access the magnitude and management outcome of non-traumatic gynecological abdominal emergencies in Mekelle Hospital, during the period of February2009 to February 2012.

4.2 Specific objectives

1. To measure the magnitude of non-traumatic gynecological abdominal emergencies in Mekelle Hospital
2. To assess the management outcome of in Mekelle Hospital
3. To identify main cause of non-traumatic gynecological abdominal emergencies in Mekelle Hospital

5-Methodology

5.1 Study area

This study was conducted in Mekelle Hospital which is found in Mekelle Town the capital city of Tigray region located in the Northern part of Ethiopia about 783km from the capital city Addis Ababa. It is a regional hospital with two major operating theatres and multidisciplinary professionals serving for Tigray region and residences around. A new Fistula Hospital which is the branch of Addis Ababa Fistula Hospital and with well-equipped operating theatre is also in the hospital ground. It has department of Medicine, Gynecology and obstetrics, Pediatrics, and Surgery with a 24, 36, 31 and 61beds respectively in each (a total of 152 beds in all of the departments). There is also one Recovery Room with 13 beds for 24hrs post-operative patients care. There are one Orthopedic, one Urology, and one Traumatology Surgeons, two Gynecologist &Obstetricians, one Internist, one Radiologist and other Medical and Paramedical professionals (Annex B: page 34). According to town administrative recent statistical data, the city has total catchment area of 19,000 hectare with total population 253,481 in 2011GC (projection from 2009GC). There are also 4 private hospitals, 1 Referral University Hospital, 1 regional hospital (Mekelle Hospital), 4 health centers and 14 private clinics in the town.

5.2 Study designs and period

A four years hospital based retrospective cross sectional study design and conducted from February2009 to February2012. The daily admission records were used to retrieve patients' records. The OPD, gynecological Ward and Operating Theater Log-books were revised.

5.3 Source populations

All patients admitted to gynecological ward

5.4 study Populations

All patients admitted to gynecological ward with the diagnosis of non-traumatic gynecological emergencies.

5.5 Inclusion Criteria

All available documents of cases admitted to gynecological wards with a clinical diagnosis of non-traumatic gynecological emergences during the study period whether or not operated were included in the study.

5.6 Exclusion criteria

Cases of other gynecological emergencies like traumatic and abortion, heamorregic ovarian cysts, myomas and cervical malignancy and documents that are unclear and inadequate information.

5.7 Sampling techniques and sample size

All patients admitted to gyn.obs wards with a clinical diagnosis of non-traumatic gynecological emergencies during the study period February 2009-February 2012 and fulfill the inclusion criteria.

5.8 Data collection instrument and techniques

Data were collected retrospectively from patients' charts using check lists by MSc students.

5.9 Data processing and analysis

Data compiling and analysis were performed using computer software SPSS version 16. The results were presented in frequency tables, percentage and charts and compared with similar studies in national and international data.

5.10 Data quality

Before the actual data collection period, check lists was supervised by supervisor to assess the completeness of questionnaire in particular cases.

5.11 Study variables

5.11.1 Dependent variables

- ✓ Occurrence of non-traumatic gynecological abdominal emergency

5.11.2 Independent variables

- ✓ Age, address, parity
- ✓ Duration of hospital stay
- ✓ Cause by type
- ✓ Drug taken
- ✓ Duration of illness
- ✓ Outcome

5.12 Ethical consideration

Before beginning data collection official letters from Mekelle University College of Health Sciences was submitted to the responsible offices. Objective of the study was explained and individual data confidentiality was kept. All sources of material used for the thesis have been duly acknowledged.

5.13. Dissemination of the Result

At the end Copy of the result will be submitted to Mekelle University College of Health Science. It was given to Tigray Regional Health Bureau and Mekelle Hospital and might be disseminated through publications in different journals and magazines.

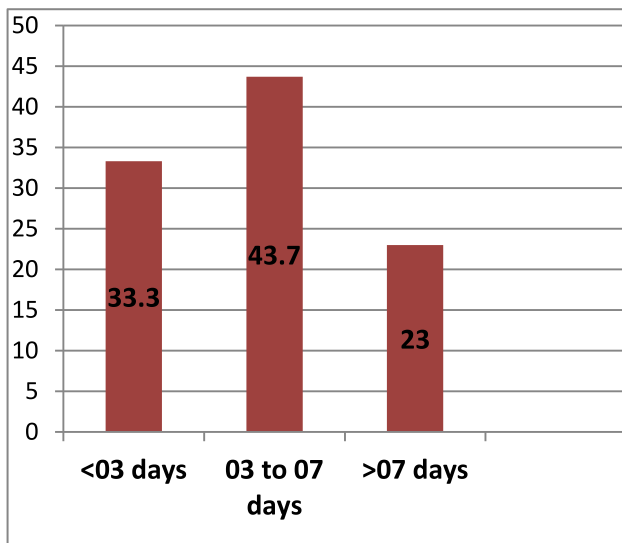
5.14 Operation definition

- ✓ Non-traumatic gynecological abdominal emergencies -non traumatic gynecological problems that needs admit ion and intervention.
- ✓ Ectopic pregnancy-conception out of the uterine cavity
- ✓ Pelvic inflammatory disease- infection of the upper reproductive tracts.
- ✓ Tub ovarian abscess -abscess collation in tubs or ovaries confirmed by clinical dx.
- ✓ Ovarian torsion- torsion of adnexal mass that needs immediate operation

6. Results

Among 146 studied groups 126(86.3%) patient records or cards were available. Among these 60(47.6%) from mekele and the rest 66(52.4%) outside mekele.99(78.6%) age between 20 to 35 years ,the rest 8.7% and 12.7% less than 20 and greater than 35yrs respectively,68.3% mulit gravid and 31.7%prim gravid. Concerning presenting sign and symptoms the majority of them 61.9% had pain, vaginal bleeding, adnexal mass and adnexal tenderness and few of them 9.5%had pain fever, tachycardia and guarding, 96% had diagnostic aids like U/s.

***Figure 1** shows frequency distribution of duration of illness of non-traumatic gynecological abdominal emergencies before admition in Mekelle hospital during February 2009 to February 2012*



Duration of the illness

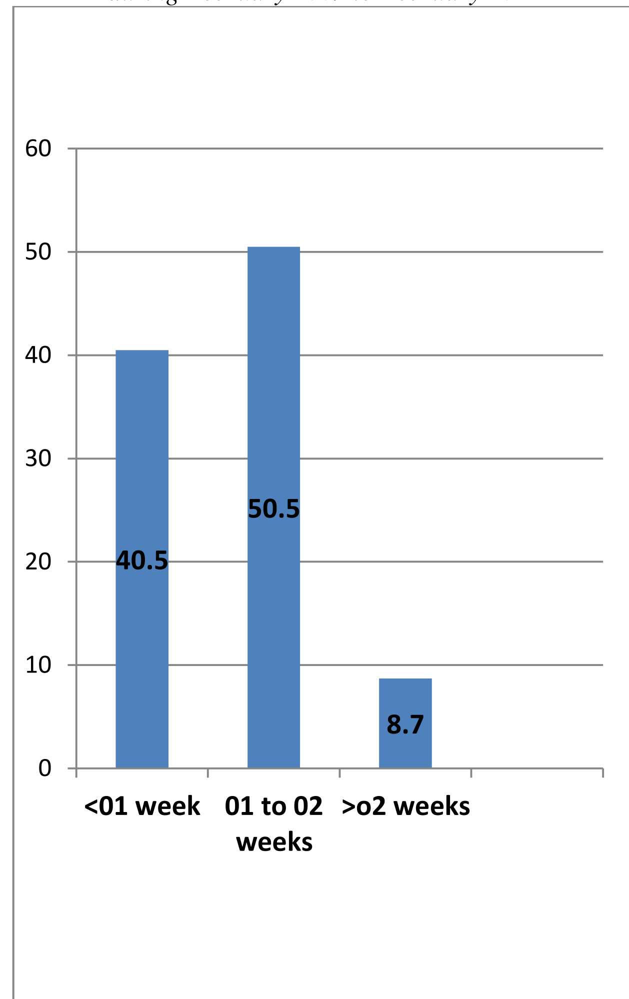
The majority of them 95% Hct within the normal range and the rest 2.4% had low Hct and needs transfusion.94(74.6%) 0f them operation performed and the rest 32(25%) managed conservatively.

***Table 1** shows frequency of pre-operative diagnosis of non-traumatic gynecological abdominal emergencies in mekele hospital during February 2009 to February 2012*

Variables	Frequency n=126	Percent (%)
Ectopic pregnancy	69	54.8
PID	32	25.4
Ovarian torsion	12	9.5
Tub ovarian abscess	8	6.3
Others	5	4.0
Total	126	100.0

Intra operatively the majority of them 93.6% had the same diagnosis and the rest 6.4% had different diagnosis, among these 74.5% ectopic pregnancy, 17.0% torsion and the remaining 8.5% tub ovarian abscess. Among ectopic pregnancy 88%of them raptured and 12% intact tubes.62.8% done salphegiogoectomy 30% salphengioopherectomy and the rest 7.2% milking. Among ovarian torsion 62.5% had viable ovaries and the rest 37.5% gangrenous. Among 95 patients operative the majority of them73.6%had no complication,23.2% mild complication and the rest 3.2% major complication,10(7. 100% of them improved and discharged.

***Figure 2** shows frequency of hospital stays of non-traumatic gynecological abdominal emergencies in mekele hospital during February 2009 to February 2012*



Duration of hospital stays

Table 2 *shows frequency of medication taken for non-traumatic gynecological abdominal emergencies in mekele hospital during February 2009 to February 2012*

Medications	Frequency n=126	Percent (%)
Mono	34	27.0
Dia	38	30.0
Triple	54	42.9
Total	126	100

7. Discussion

There were 1100 elective and emergency operations were done during the study period. Among these non-traumatic gynecological acute abdominal emergencies (ectopic pregnancy, ovarian torsion, tub ovarian abscess and pelvic inflammatory disease) were 13.3% with similar study done in North America (1, 2). The prevalence of ectopic pregnancy in this study was 6.3% but study done in Africa countries shows 0.5% to 2.3% and 0.4% to 0.6% in Asia and Middle east in 1000 live births (3,4).the difference in prevalence probability due to they detected early due to availability of especial diagnostic aids and skilled man power. The prevalence of torsion of adnexal mass was 1.8% with similar study done in developing countries including Ethiopia shows with prevalence of 2.3% to 2.7%(4,5,6). Tub ovarian abscess is the most serious cause of non-traumatic gynecological abdominal emergency with 8.6% mortality rate(12) Its prevalence was 1.5% with similar study done in united kingdom 1% to 4%(5,12). Pelvic inflammatory disease a common gynecological problem both in developed and developing countries in this the proportion was 2.7% with similar study done in developing countries (9,10, 11). The median duration of illness before admit ion of the study population were 5.2days.those had delayed admit ion greater than 07days had long hospital stays and major complication similar study done in Tikur Anbessa supports this study(6). There were 26.4% both mild and major post-operative complications unlikely the study done in united kingdom and some African countries like Uganda post-operative complication below 10%(4,8).The difference might be due to cross contaminations in operation rooms, recovery rooms and in wards. Most of the studies confirm early diagnosis and treatment the mortality rate of non-traumatic gynecological abdominal emergencies were below zero 100% of the patients improved and discharged in this study.

8. Limitation

- ✓ It is Institutional based study difficulty to concluded about the whole population.
- ✓ The data was secondary and in complete data recording and errors were greater.
- ✓ Lack of adequate study done in our country.
- ✓ Smaller sample size.

9. Conclusion

Non-traumatic gynecological abdominal emergencies like Ectopic pregnancy, pelvic inflammatory disease ovarian torsion and tub ovarian abscess were 13.3% the majority of them ectopic pregnancy 6.3% followed by pelvic inflammatory disease, ovarian torsion and tub ovarian abscess 2.7%,1.8% and1.5% respectively. The majority of the cases delays hospital admition about 66.7%,there were differences in pre-operative and intra operative diagnosis about 4.6% .among 95 patients operative about73.6%had smooth post-operative course the reaming 23.3%,2.3% had mild and major complication respectively. About 8.7% of them had long hospital stays greater than two weeks. All of them improved and discharged..

10. Recommendation

- ✓ Intensive history and physical examination were important in addition to some diagnostic means to early diagnosis and treatment of non-traumatic gynecological abdominal emergencies to minimalize the pre-operative diagnosis errors and long hospital stays.
- ✓ Restrict sterilization operation instruments and keeping recovery rooms clean, reducing numbers of patient visitor to minimize post-operative complications.
- ✓ Triple medical treatment is important for Pelvic inflammatory disease to avoid its sequel like tub ovarian abscess, ectopic pregnancy and infertility.
- ✓ Intensive study is helpful using primary data to know the exact prevalence of non-traumatic gynecological abdominal emergencies.

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Author Profile

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