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Immediate Postoperative Complications of General Surgery in Atbara Teaching Hospital From June to July 2018

A Research Submitted as Fulfillment of Partial Requirement Degree B.Sc. in Nursing

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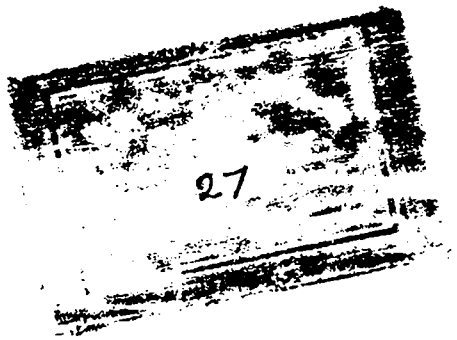

DEDICATION

To our families and friends.

To all mothers and fathers in the world .

To our sisters and brothers.

To our teachers.

ACKNOWLEDGEDMENT

We thank our merciful Allah for giving us strength and health to do this work .

We are grateful to our supervisor Dr. Asma Hassan Ahmed for her supervision , encouragement , advise and correction of this work .

Abstract

Background: common surgery can be follow by postoperative complications in all ages. This study is cross sectional study in Atbara teaching hospital male and female surgical ward include 45 post-operative patients. **objectives** : The aim of this study is to investigate the common causes of postoperative complications in Atbara hospital in period (June – July 2018).The result of this study reflect 22,2% of postoperative complication was hypertension, while 6,6% was tachypnea, moderate pain, while 46,7% urine retention.

The study concluded the high blood pressure, tachypnea, pain and low urine out put the most common postoperative complications in Atbara hospital. **Recommendations** recommended further studies must be done, urinary catheter should be inserted.

المستخلص:-

أغلب العمليات الجراحية تتبع بمضاعفات ما بعد العملية في كل الأعمار . هذه الدراسة عبارة عن دراسة مقطعية مستعرضة في مستشفى عطبرة التعليمي في عنابر الجراحة رجال ونساء وتتضمن خمس وأربعون مريض بعد العملية . الهدف من هذه الدراسة هو التحقق من الأسباب الشائعة لمضاعفات ما بعد الجراحة في مستشفى عطبرة في الفترة (يونيو - يوليو 2018). أظهرت نتائج هذه الدراسة أن 22,2 %من المضاعفات ما بعد العملية كانت ارتفاع ضغط الدم ،في حين ان 6,6٪ كانت تسرع التنفس9 , 28٪ هي درجة الألم ، 46,7٪ تم حبس البول خوفا من الحركة ، وخلصت الدراسة إلى أن ارتفاع ضغط الدم ومعدل التنفس والألم وانخفاض كمية البول واحد من أكثر المضاعفات ما بعد العملية شيوعا في مستشفى عطبرة، أوصت الدراسة بإجراء المزيد من الدراسات ، وينبغي إدخال القسطرة البولية قبل العملية .

List of Contents

Topics	Page
الاية	I
Dedication	II
Acknowledgements	III
Abstract Arabic	IV
Abstract English	V
Table of contents	VI
List of Tables	VIII
List of Abbreviations	IX
Chapter one : Introduction	
1.1 Introduction	1
1.2 Research problem	2
1.3 Research Justification	2
1.4 Research objectives	3
Chapter Two: Literature Review	
Literature Review	4
Previous Studies	12
Chapter Three: Methodology	
3.1 Study design	13
3.2 Study setting	13
3.3 Study period	13
3.4 Study population	13
3.5 sample size	13
3.6 sample technique	13

3.7 Data collection	13
3.8 Ethical consideration	13
3.9 Data analysis	13
Chapter Four: Data Analysis	
4.1 Data analysis	19
4.2 Results	24
4.3 Discussion	26
Chapter Five:	
5.1Conclusion	27
5.2 Recommendations	27
References	28
Appendix	

List of Tables

Table No	Subject	Page No
4-1	Distribution of study group regarding age, gender, address and years of experience:	19
4-2	operation name, postoperative time, type of anesthesia, consciousness	20
4-3	Chronic disease and heart disease	21
4-4	vital sign	22
4-5	postoperative pain, bleeding, blood transfusion, vomiting, intake , output	23

List of Abbreviations

CT	Computed Tomography
CVP	Central Venous pressure
DVT	Deep Venous Thrombosis
FFP	Fresh Frozen Plasma
IV	Intra venous
NPO	Nothing by oral
SSIs	Surgical Site Infection
UTI	Urinary Tract Infection

Chapter one

1-1 Introduction :-

surgery (from Greek word cheirourgike and Latin: chirurgiae meaning hand work) is a medical specialty that uses operative manual and instrumental techniques on a patient to investigate or treat a pathological condition such as a disease or injury ,to help improve bodily function or appearance or to repair unwanted ruptured areas.[1]

Surgical classification: Surgery may be performed for various reasons. A surgical procedure may be diagnostic (e.g., biopsy, exploratory laparotomy), curative (e.g., excision of a tumor or an inflamed appendix), or reparative (e.g., multiple wound repair). It may be reconstructive or cosmetic (e.g., mammoplasty or a facelift) or palliative (e.g., to relieve pain or correct a problem--for instance, a gastrostomy tube may be inserted to compensate for the inability to swallow food) . Surgery may also be classified according to the degree of urgency involved: emergent, urgent, required, elective, and optional [2]

1-2 Research problem:-

Postoperative complications cause death ' and suffering ' long hospital stay and increase cost. Patient who have complications are more likely to die 'even 5 year after surgery.

1-3 Research Justifications

Nurses performance post operatively need knowledge, skills, and monitoring to ensure good outcome. Shortage of nurses, poor facilities and poor environment poses great obstacles in nurses practice post operatively.

1-4 Research Objective:-

General objective;-

To assess common postoperative complications in general surgery in Atbara hospital.

Specific objective;-

To identify most common causes of postoperative complications.

To detect the relation between the complications and some variables(age, type of anesthesia ,operations , chronic disease , heart disease, vital sing).

Chapter two

Literature Review

2-1 Common Postoperative Complications

Postoperative complications may either be general or specific to the type of surgery undertaken and should be managed with the patient's history in mind. Common general postoperative complications include postoperative fever, Atelectasis, wound infection, embolism and deep vein thrombosis(DVT) The highest incidence of postoperative complications is between one and three days after the operation. However, specific complications occur in the following distinct temporal patterns: early postoperative, several days after the operation, throughout the postoperative period and in the late postoperative period.[3]

2-2 Postoperative fever

Days 0-2, Mild fever (temperature <38°C) (common):- Tissue damage and necrosis at the operation site. Haematoma .Persistent fever (temperature >38°C):-Atelectasis: the collapsed lung may become secondarily infected. Specific infections related to thesurgery. - eg, biliary infection following biliary surgery, UTI following urological surgery .Blood transfusion or drug reaction Days 3-5,Bronchopneumonia,Sepsis.

Wound infection Drip site infection or phlebitis. After 5 days Specific complications related to surgery - eg, bowel anastomosis breakdown, fistula formation After the first week: Wound infection Distant sites of infection - eg, UTI, chest infection DVT, pulmonary embolus [4][5]

2-3 Hemorrhage

If large volumes of blood have been transfused then hemorrhage may be exacerbated by consumption coagulopathy. It may also be due to pre-operative anticoagulants or un recognised bleeding diathesis. Perform

clotting screen and platelet count; ensure good intravenous (IV) access. If there is very significant bleeding and it is safe to do so, consider inserting a central venous pressure (CVP) catheter. Give protamine if heparin has been used. Order cross-matched blood. If the clotting screen is abnormal, give fresh frozen plasma (FFP) or platelet concentrates. Consider surgical re-exploration at all times. Late postoperative hemorrhage occurs several days after surgery and is usually due to infection damaging vessels at the operation site. Treat the infection and consider exploratory surgery[6].

2-4 Infection

Infectious complications are the main causes of postoperative morbidity in abdominal surgery. Postoperative incidence has lessened with the advent of prophylactic antibiotics but multi-resistant organisms present an increasing challenge .**Wound infection**:- the most common form is superficial wound infection occurring within the first week, presenting as localized pain, redness and slight discharge usually caused by skin staphylococci **.Cellulitis and abscesses**:-Usually occur after bowel-related surgery .Most present within the first week but can be seen as late as the third postoperative week, even after leaving hospital. Present with pyrexia and spreading cellulitis or abscess[7]

Cellulitis is treated with antibiotics Abscess requires suture removal and probing of the wound but deeper abscess may require surgical re-exploration. The wound is left open in both cases to heal by secondary intention .Gas gangrene is uncommon and life-threatening. Wound sinus is a late infectious complication from a deep chronic abscess that can occur after apparently normal healing. It usually needs re-exploration to remove non-absorbable suture or mesh, which is often the underlying cause[7].

2-5 Disordered wound healing

Most wounds heal without complications and healing is not impaired in the elderly unless there are specific adverse factors or complications. Factors which may affect healing rate are:[5]-Poor blood supply , Excess suture tension. Long-term steroids., Immunosuppressive therapy Radiotherapy, Severe rheumatoid disease Malnutrition and vitamin deficiency[8].

2-5-1 Wound dehiscence

This affects about 1% of midline laparotomy wounds.It is a serious complication with a mortality of up to 30%.It is due to failure of wound closure technique. It usually occurs between 7 and 10 days postoperatively. Often, it is heralded by serosanguinous discharge from the wound .It should be assumed that the defect involves the whole of the wound .Initial management:- includes opiate analgesia, sterile dressing to the wound, fluid resuscitation and early return to theatre for re-suture under general anesthesia[8].

2-6 Incisional hernia

This occurs in 10-15% of abdominal wounds, usually appearing within the first year but can be delayed by up to 15 years after surgery. Risk factors include obesity, distension and poor muscle tone, wound infection and multiple use of the same incision site. It presents as a bulge in the abdominal wall close to a previous wound[9]

It is usually asymptomatic but there may be pain, especially if strangulation occurs. It tends to enlarge over time and become a nuisance. Management: surgical repair where there is pain, strangulation or nuisance. The use of laparoscopic techniques and biosynthetic mesh is being evaluated.[10][11]

2-7 Surgical injury

Unavoidable tissue damage to nerves may occur during many types of surgery - eg, facial nerve damage during total parotidectomy, impotence following prostate surgery or recurrent laryngeal nerve damage during thyroidectomy. There is also a risk of injury whilst under general anesthetic and being transported and handled in the theatre. These include injuries due to falls from the trolley, damage to diseased bones and joints during positioning, nerve palsies and diathermy burns[12].

2-8 Respiratory complications

Respiratory complications occur after major surgery, particularly after general anesthesia and can include :Atelectasis (alveolar collapse)This is caused when airways become obstructed, usually by bronchial secretions. Most cases are mild and may go unnoticed. Symptoms are slow recovery from operations, poor colour, mild tachypnoea and tachycardia. A presumed association between Atelectasis and early postoperative fever has not been supported by recent studies. Prevention is by pre-operative and postoperative physiotherapy. In severe cases, positive pressure ventilation may be required. Pneumonia: requires antibiotics, and physiotherapy. Aspirationpneumonitis: Up to 4.5% has been reported in adults; higher in children. Sterile inflammation of the lungs from inhaling gastric contents. Presents with a history of vomiting or regurgitation with rapid onset of breathlessness and wheezing. A non-starved patient undergoing emergency surgery is particularly at risk. It may be of help to avoid this by crash induction technique and use of oral antacids or metoclopramide. Mortality is nearly 50% and requires urgent treatment with bronchial suction, positive pressure ventilation, prophylactic antibiotics and IV steroid[12]

2-8-1 Acute respiratory distress syndrom

Rapid, shallow breathing, severe hypoxemia with scattered crepitations but no cough, chest pains or haemoptysis, appearing 24-48 hours after surgery. it occurs in many conditions where there is direct or systemic insult to the lung - eg, multiple trauma with shock. The complication is rare and various methods have been described to predict high-risk patients. It requires intensive care with mechanical ventilation with positive end pressure[12].

2-8-2 Thromboembolism

DVT and pulmonary embolism are major causes of complications and death after surgery. Many cases are silent but present as swelling of the leg, tenderness of the calf muscle and increased warmth with calf pain on passive dorsiflexion of the foot. Diagnosis is by venography or Doppler ultrasound[13][14].

Pulmonary embolism:-Classically presents with sudden dyspnoea and cardiovascular collapse with pleuritic chest pain, pleural rub and haemoptysis. However, smaller pulmonary emboli are more common and present with confusion, breathlessness and chest pain. Diagnosis is by ventilation/perfusion scanning and/or pulmonary angiography or dynamic CT[13][14].

2-9 Common urinary problems

Urinary retention: this is a common immediate postoperative complication that can often be dealt with conservatively with adequate analgesia. If this fails, catheterization may be needed, depending on surgical factors, type of anesthesia, co morbidities and local policies UTI: this is very common, especially in women, and may not present with typical symptoms. Treat with antibiotics and adequate fluid intake[15].

2-9-1 Acute kidney injury

This may be caused by antibiotics, obstructive jaundice and surgery to the aorta. It is often due to an episode of severe or prolonged hypotension. It presents as low urine output with adequate hydration. Mild cases may be treated with fluid restriction until tubular function recovers. However, it is essential to differentiate it from pre-renal acute kidney injury due to hypovolaemia which requires rehydration. In severe cases haemofiltration or dialysis may be needed while function gradually recovers over weeks or months. One study found that factors predictive of acute kidney injury included advanced age, liver disease, high-risk surgery and peripheral arterial disease.[16]

2-10 Complications of bowel surgery

Delayed return of function: Temporary disruption of peristalsis: the patient may complain of nausea, anorexia and vomiting and it usually appears with the re-introduction of fluids. It is often described as illus. The more prolonged extensive form with vomiting and intolerance to oral intake is called a dynamic obstruction and needs to be distinguished from mechanical obstruction. It involves the large bowel and is usually described as pseudo-obstruction. It is diagnosed by instant barium enema. Early mechanical obstruction: this may be caused by a twisted or trapped loop of bowel or adhesions occurring approximately one week after surgery. It may settle with nasogastric aspiration plus IV fluids or progress and require surgery. Late mechanical obstruction: adhesions can organize and persist, commonly causing isolated episodes of small bowel obstruction months or years after surgery. Treat as for the early form[17].

Anastomotic leakage or breakdown: small leaks are common, causing small localized abscesses with delayed recovery of bowel function. It is

27

often diagnosed late in the postoperative period. It usually resolves with IV fluids and delayed oral intake but may need surgery.[15]Major breakdown causes generalized peritonitis and progressive sepsis needing surgery for peritoneal toilet and antibiotics. A local abscess can develop into a fistula[18].

2-11 Prevention of postoperative complications

This is an enormous subject which cannot be dealt with in any great detail here. However, some basic principles are as follows:-Colorectal surgery - evidence-based interventions associated with a reduction in complications include: Weight control. Optimal nutritional status. Bowel preparation in selected cases (eg, temporary loop ileostomy) but not routinely. Correction of anemia.,Correction of intra-operative blood loss. Technical aspects - eg, choice of incision, technique, drainage. Adequate postoperative analgesia. Prophylactic use of antibiotics - the effectiveness of antibiotics in preventing surgical site infections (SSIs) is well documented, although debate continues concerning duration and choice. Anastomotic leakage - there are few proven interventions. A Cochrane review found that fewer leakages occurred with stapled anastomosis than with those which were hand-sewn. Illus - shorter operative times and reduction of intra-operative blood loss are associated with a lower incidence of ileus.DVT and pulmonary embolus - see separate Prevention of Venous Thromboembolism article [19].

Intra-operative hemorrhage - pre-operative screening for coagulopathies is important. Various methods are available to the modern surgeon, including mechanical tools, energy-based technologies and topical haemostatic agents.[20]

Urinary retention - interventions vary according to the procedure involved but include use of catheterization, optimal time of removal of catheters, type of anesthesia and fluid balance.[20]

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2-12 Pervious studies

Pierre A. Clavien,*at all . In 2009. The aim of this study was to critically evaluate postoperative complications. Result noted a dramatic increase in the occurrence of the complications in many fields of surgery. Conclusions: This 5-year evaluation provides strong evidence that the classification is valid and applicable worldwide in many fields of surgery. No modification in the general principle of classification is warranted in ongoing publications and trials. Subjective, inaccurate, or confusing terms such as "minor or major" should be removed from the surgical literature.[21]

CHAPTER THREE

Methodology

3-1 Study design:

Hospital based study at Atbara teaching hospital.

3-2 Study setting :

The study was done in Atbara teaching hospital , male and female surgical wards.

3-3 Study period :

The study was conducted from (June 2018- July 2018).

3-4 Study populations:

Postoperative surgical adult patients in surgical wards at the first 8 hours

3-5 Sample size:

Total converge of 6 hours postoperative patients.

3-6 Sample technique :

Random.

3-7 Data collection tools:

Instructed questionnaire based on literature was used to collect the data, postoperative parameters from the participant were collected by using pulse oximeter sphagnometer thermometer, calibration of device done after each 10 patient.

3-8 Ethical consideration :

Approval from research committee of this research was approved from university committee.

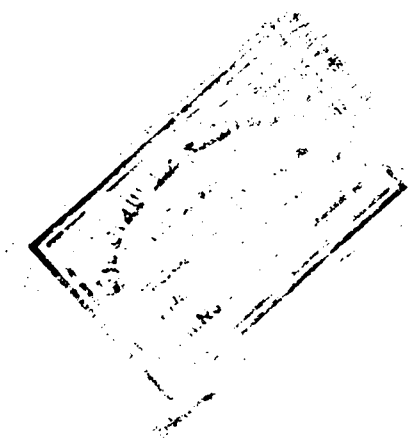
Permission took from hospital director.

Verbal consent from patient.

3-9 Data Analysis:

The data was and analyzed by computer SPSS.

CHAPTER Four



4-1 Data Analysis:

Table no (4.1) Distribution of study group regarding age, gender, address:

Personal data	Variable	Frequency and percentage	T0tal
Age	18-28	24 (53.3%)	45 100%
	29-39	9 (20%)	
	40-50	6 (13.3%)	
	51and above	6 (13.3)	
Gender	male	18 (40.0%)	45 100%
	Female	27 (60.0%)	
Address	Atbara	35(77.8%)	45 100%
	Barbar	8 (17.8%)	
	AlDamr	2 (4.4%)	

Table (4.2) operation name, postoperative time, type of anesthesia, consciousness:

Operation data	Variable	Frequency and percentage	Total
Operation name	Laparotomy	1(2.2%)	45 100%
	Cholecystomy	1(2.2%)	
	Radial mastectomy	1(2.2%)	
	Fracture repair	3(6.6%)	
	Appendectomy	25(55.6%)	
	Hernia repair	6(13.2%)	
	Undiscerning tests repair	1(2.2%)	
	Annual fissure repair	3(6.6%)	
	Breast biopsy	1(2.2%)	
	Hemorrhoidectomy	1(2.2%)	
	Tonsillectomy	1(2.2%)	
	Prostatectomy	1(2.2%) %	
postoperative time	First hour	9(20.0) %	45 100%
	Second hour	11(24.5) %	
	Third hour	2(4.4) %	
	Fourth hours	5(11.1) %	
	Fifth hours	6(13.3) %	
	Six hours	12(26.7) %	
type of anesthesia,	General	29(64.4) %	45 100%
	Spinal	16(35.6) %	
consciousness	Oriented	41(91.1) %	
	Un oriented	4(8.9) %	

Table (4.3) Chronic disease and heart disease

Chronic disease	Variable	Frequency and percentage	Total
HTN	Yes	6(13.3%)	45
	No	39(86.7%)	100%
DM	Yes	7(15.6%)	45
	No	38(84.4%)	100%
ASTHMA	Yes	7(15.6%)	45
	No	38(84.4%)	100%
Heart disease	Yes	2(4.4%)	45
	No	43(95.6%)	100%
Valvular disease	Yes	1(2.2%)	45
	No	44(97.8%)	100%

Table (4 .4) : vital sign

vital sign	Variable	Frequency and percentage	Total
Pulse	normal	42(93.4%)	45 100%
	tachycardia	3(6.6%)	
Respiratory rate	normal	42(93.4%)	45 100%
	apnea	3(6.6%)	
Blood pressure	normal	28(62.2%)	45 100%
	hypotension	7(15.6%)	
	hypertension	10(22.2%)	
temperature	normal	41(91.2%)	45 100%
	hypothermia	3(6.6%)	
	hyperthermia	1(2.2%)	
Oxygen saturation	Normal	39(86.8%)	45 100%
	Low	6(13.2%)	

Table(4-5) postoperative pain, bleeding, blood transfusion, vomiting, intake , output

Post operative data	Variable	Frequency and percentage	Total
Pain	Mild	8(17.7%)	45 100%
	moderate	26(57.9%)	
	severe	11(24.4%)	
bleeding	Yes	2(4.4%)	45 100%
	No	43(95.6%)	
blood transfusion	Yes	1(2.2%)	45 100%
	No	44(97.2%)	
vomiting	Yes	12(26.4%)	45 100%
	No	33(73.6%)	
Intake	600-1000	28(62.2%)	45 100%
	1100-1500	13(28.9%)	
	Above 1600	4(8.9%)	
Output	No output	18(40.0%)	45 100%
	50-400	16(35.6%)	
	450-1000	11(24.4%)	

4-2 RESULTS :

To number of participant in research ere 45 patients

Table (1) shows study group ages were (53.3%)of them 18_28 years old ,while(20%) of them 29-39 years old , while (13.3%) were 40-50 years old ,and (13.3%) were 51and above years old, the majority of patient were females (60.0%) and male were (40.0%), from Atbara (77.8%),from barber (17.8%) and Eldamar (4.4%)

Table (2) shows that operation name ((2.2%) Laparotomy, (2.2%) Cholecystomy, (2.2%) Radical mastectomy, (6.6%) Fracture repair, (55.6%) Appendectomy , (*13*.2%) Hernia repair , (2.2%) Undiscerning tests repair, (6.6%) Annual fissure repair, (2.2%) Breast biopsy , (2.2%) Hemorrhoidectomy, (2.2%) Tonsillectomy, (2.2%) Prostatectomy, (20.0%) in first hour postoperative , (24.5%) Second hour postoperative, (4.4%) Third hour postoperative, (11.1%) Fourth hours, (13.3%) Fifth hours, and (26.7%) Six hours postoperative , anesthesia (64.4%) general , (35.6%) spinal , (91.1%) Oriented , (8.9%) Un oriented.

Table(3) shows (13.3%) were HTN , (86.7%)were not HTN , (15.6%) were DM, (84.4%) were not DM , (15.6%) were asthma , (84.4%) were not asthma , (4.4%) were heart disease , (95.6%) were no heart disease , (2.2%) were valvular disease, (97.8%) were not valvular disease,

Table (4) shows (93.4%) were normal pulse rate , (6.6%) were tachycardia , (93.4%) were normal respiratory rate, (6.6%) were apnea, (62.2%) were normal blood pressure, (15.6%) were hypotension, (22.2%) were hypertension, (91.2%) were normal temperature, (6.6%) were hypothermia, (2.2%) were hyperthermia, (86.8%) normal oxygen saturation, (13.2%) low oxygen saturation

Table (5) shows (17.7%) were mild pain , (57.9%) were moderate pain, (24.4%) were severe pain, (4.4%) were bleeding (95.6%) were not bleeding, (2.2%) were blood transfusions, (97.2%) were not blood transfusions , (26.4%) were vomiting, (73.6%) were not vomiting, (62.2%) intake (600-1000), (28.9%) intake (1100-1500), (8.9%) intake above 1600, (40.0%) no voiding urine, (35.6%) output (50-400) , (24.4%) output (450-1000).

4-3 Discussion

This s study involve patients postoperative complications in surgical unit, which half of them age were 18-28 years old , majority of them female, more than half from Atbara. The study showed appendectomy and hernia was the most common surgery, the majority of them with general anesthesia , most of them were un orientated .

Our study similar to study conducted by pakistan journal of medical sciences by Masood jawaid, zubia masood , sayed Abdullah iqbal 2006. the aim to find out postoperative complications during hospital study of patients in a general surgical word at tertiary care teaching hospitals of Karachi .the result show the most common surgical occurrence is hernia and appendectomy. (22)

Most of patients not known to be hypertensive developed high blood pressure postoperative.

The current study was deferent from another study conducted by Kathryn zetiz in2003. The aim of the research was to identify if the current practice of postoperative vital sign collection detects postoperative complication in the first 24 hours after patient has return to the general ward sitting .to determine this it was important to o. the result show 53% from patient have alteration in vital sign the high a percentage for temperature .(23) This study show high percentage for blood pressure.

Most postoperative patients were small amount of urine output although were not urination problem related to hot environmental in surgical word or fear from movement after the surgery.

CHAPTER FIVE

5-1 Conclusions:

Postoperative complications were frequent disorders that were associated with poor clinical outcome thus; structural and procedural changes should be implemented to reduce postoperative morbidity and mortality.

5-2 Recommendations:

Based on the above finding s the study recommended that :-

More type of study should be carried out on large sample size .

Close observation ,sufficient medical devices, train to nurses ,and collaboration should be carried out to prevent postoperative complication.

Early detection of patients parameters postoperative to facilitate good quality of care.

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Appendix

Bleeding scale

	Class I	Class II	Class III	Class IV
Blood loss (ml)	<750 ml	750-1500 ml	1500-200	>2000
Blood loss(%)	<15%	15-30%	30-40%	>40%
Heart rate	<100	100-120	120-140	>140
Blood pressure	Normal	Normal	Decreased	Decreased
Respiratory rate	14-20	20-30	30-40	>40
Urine output (ml/hr)	>30	20-30	5-20	<5

Questionnaire about common post operative complications in general surgery in Atbara hospital:-

1) Patient code : ( )

2) Age :- ( )

3) Gender: male( ) female( )

4) Address :

5) Operation name :

6) post operative time :

First hour( ) Second hour ( ) Third hour ( )

Fourth hour ( ) fifth hour ( ) sixth ( )

7)Type of anesthesia :

General ( ) Spinal ( ) Local ( )

8) Consciousness : Oriented ( ) un oriented ( )

9) Chronic disease :

a- HTN : yes ( ) No ( )

if yes antihypertensive:

b-DM : yes ( ) No ( )

if yes hypoglycemia agents :

Insulin : type unit

Oral hypoglycemic agent:

Type

Dose

c- Asthma : yes( ) No(0029©

if yes drug use name :

10) Present heart disease :

Ischemic heart disease : ( )

Heart attack : ( )

Valvular disease : ( )

other :

11) Sensitivity to any drug : yes ( ) No ( )

if yes name the drug :

12) vital sign :

a) Pulse : ( )

b) Respiratory rate : ( )

c) Blood pressure : ( )

d) Temperature : ( )

e) Oxygen saturation : ( )

13) Pain degree : ( )

if present drug use to treat it :

14) Bleeding : yes ( ) No ( )

if yes: class I ( ) class II ( ) class III ( ) class IV ( )

*Blood transfusion : yes ( ) No ( )

if yes numbers of bag ( )

* Vomiting : Yes( ) No( )

if yes : frequency ( )

*Diarrhea : Yes( ) No( )

if yes : frequency ( )

* Abdominal distention : Yes ( ) No ( )

if yes abdominal girth : ( )

skin yellowish : yes ( ) No ( )

eye yellowish : yes ( ) No ( )

* Intake : ( )

Start oral fluid: Yes ( ) No ( )

IV fluid in sex hour: ( )

* Output : ( )

* Urine amount :

* Drainage amount :