

## **RECOMMENDATIONS**

In the light of the results and conclusions of the current study, the followings are recommended:

- RTA considers the main cause in BAT, so measures should be taken by government in roads.
- Health education about safety measures is essential to avoid different injuries in trauma patients.
- All ER staff members should be aware of the different patterns of injuries occurring in abdominal trauma patients.
- All trauma patients should be subjected to the measures of Advanced Trauma Life Support (ATLS) protocol at the scene and ED.

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**PROSPECTIVE STUDY OF RETROPERITONEAL INJURIES  
AFTER BLUNT ABDOMINAL TRAUMA**

دراسة مستقبلية لإصابات خلف التجويف البريتوني بعد صدمات البطن الرضية

Protocol of a thesis submitted  
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**Master of Emergency Medicine**

خطة بحث مقدمة  
لكلية الطب  
جامعة الإسكندرية  
ناءً جزئياً  
لشروط الحصول على درجة  
الماجستير في طب الطوارئ

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## INTRODUCTION

Trauma continues to be an enormous public health problem worldwide and it is associated with high morbidity and mortality both in developed and developing countries.<sup>(1)</sup> The prevalence of intraabdominal injury among patients presenting to the emergency department with blunt abdominal trauma is approximately 13 percent.<sup>(2)</sup> Motor vehicle accidents account for 75% of cases of blunt abdominal trauma.<sup>(3)</sup>

The retroperitoneum is that portion of the abdomen posterior to the peritoneal cavity from the diaphragm to the pelvic inlet. It is separated from the peritoneum anteriorly by the posterior peritoneal fascia and is bounded posteriorly by the transversalis fascia.<sup>(4)</sup> The retroperitoneal structures are: pancreas, kidneys, duodenum and portions of the colon and rectum. The abdominal aorta and its abdominal branches, inferior vena cava and its tributaries including hepatic veins, inferior mesenteric vein, ascending lumbar veins are the vascular structures of interest to surgeons treating victims of trauma. Internal iliac artery and external iliac artery may also be injured from blunt or penetrating trauma. Lumbar veins and segmental arteries in the area of psoas muscle and lumbosacral spine bilaterally also must be considered as parts of the retroperitoneal vasculature.<sup>(5)</sup>

Pelvic and spine fractures are the most frequent sources of retroperitoneal hematoma, they account for 50- 60% of cases followed by wounds of the kidney and bladder. Retroperitoneal hematoma regularly develops around injuries to the pancreas and duodenum.<sup>(6)</sup>

Physical examination and laboratory tests can be unreliable in detecting abdominal injuries, particularly retroperitoneal injuries.<sup>(7)</sup> Delay of diagnosis after blunt abdominal trauma may be due to masking of the abdominal manifestations by concomitant head, chest or extremities injury. In most of the times, the patient is unable to give an accurate history and in other times, he is unconscious.<sup>(8)</sup>

The exact diagnosis and operative decision after blunt abdominal trauma is usually delayed that is why the complications are common and the mortality rates are high. Diagnostic peritoneal lavage (DPL), ultrasonography (US), computed tomography (CT) and angiography all have been used to evaluate patients with abdominal trauma in recent years.<sup>(9)</sup> Bedside tests such as diagnostic peritoneal lavage and focused ultrasonography for the assessment of trauma can yield negative findings or fail to help detect signs of retroperitoneal injury, even in the presence of significant retroperitoneal injury.<sup>(10,11)</sup>

Imaging, particularly computed tomography (CT), plays a central role in the assessment of retroperitoneal structures following blunt trauma.<sup>(11)</sup> The appropriate management of blunt abdominal trauma depends on a careful initial evaluation; the timely use of diagnostic procedures; and vigorous therapy directed at immediate life threatening problems.<sup>(3)</sup>

## **AIM OF THE WORK**

**The aim of this work is to:**

1. Study the incidence and the patterns of retroperitoneal injuries after blunt abdominal trauma in the emergency department.
2. Assess the outcomes of management of retroperitoneal injuries.

## **PATIENTS**

This prospective study will be conducted on all patients with blunt abdominal trauma with proven retroperitoneal injuries admitted to Alexandria Main University Hospital within 6 months from 1<sup>st</sup> of October 2013 to 1<sup>st</sup> of April 2014.

## METHODS

Patients with blunt abdominal trauma will be subjected to the following:

### **Primary Survey:**

- Airway with C-spine control: Voice, air exchange, patency, cervical immobilization.
- Breathing: Breath sounds, chest wall, neck veins.
- Circulation: Mentation, skin color, pulse, blood pressure, neck veins, external bleeding.
- Disability (neurologic): Pupils, extremity movement (site and type), voice
- Expose the patient.

### **Resuscitation:**

- ECG leads, pulse oximetry, IV, draw labs.
- Gastric and urethral catheters.

### **Secondary Survey:**

- Head-to-toe examination (including spine).
- AMPLE history (A = allergies, M = medications currently taken, P = past illness, L = last meal, E = events related to injury)
- Imaging.

**Definitive Care of patients with proven retroperitoneal injuries:**

- Surgery: type, operative maneuver, specialty workup.
- Splinting: types, duration.
- Medications (if indicated).
- Consultation.
- Transfer.
- Follow up until discharge.

**Tertiary Survey:**

- Repeat primary and secondary surveys within 24 hours.

## **RESULTS**

The results of this study will be recorded, tabulated and statistically analyzed according to appropriate methods.

## **DISCUSSION**

The results will be discussed in view of achievement of the aim, their significance and their comparison with previous related researches.

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## الملخص العربي

**المقدمة:** صدمات البطن الرضية يمكن أن تسبب إصابات كبيرة وأحيانا مهددة للحياة لمنطقة خلف التجويف البريتوني. الأشعة المقطعية تلعب دورا مركزيا في تقييم اصابات خلف التجويف البريتوني بعد صدمات البطن الرضية.

**الهدف من البحث:** كان الهدف من هذا العمل تحديد انواع و انماط اصابات خلف التجويف البريتوني بعد صدمات البطن الرضية وايضا تقييم نتائج العلاج لاصابات خلف التجويف البريتوني بعد صدمات البطن الرضية.

**المرضى و طرق البحث :** اشتملت الدراسة على ٢٧٨ مصاب باصابات رضية بالبطن ومن بين هؤلاء كان هناك ٨١ مصاب باصابات خلف التجويف البريتوني بمستشفى الرئيسي الجامعي وكان معظمهم من الذكور و تشمل الفئات العمرية المختلفة وتناولت طرق البحث والفحص الطبي والكشف على الرأس و العنق و الصدر و البطن و الاطراف و تم عمل التحاليل والإشاعات اللازمة .

**النتائج:** اوضحت الدراسة ان معظم الحالات كانت نتيجة الحوادث المرورية وهي تمثل (٦٦.٧٪) ، تليها حوادث السقوط (٢٢.٢٪) والاعتداء الجسدي (١١.١٪). و قد لوحظ ان أغلبية المصابين من الذكور بنسبة (٧٤.١٪) و (٢٥.٩٪) من الاناث. واثرت اصابات خلف التجويف البريتوني بشكل رئيسي على المرضى الصغار الذين ينتمون إلى الفئة العمرية (٢٠-٣٠) سنة. اوضحت الدراسة ان غالبية الحالات قد أظهرت علامات وأعراض إيجابية. و قد لوحظ ان الأكثر شيوعا في اصابات خلف التجويف البريتوني هو نتيجته ورم دموي خلف التجويف البريتوني بنسبة (٨٠.٢٪) خاصه الموقع الثالث من المنطقة التي عادة ما تكون بسبب كسر الحوض. و قد لوحظ ان الاصابات المصاحبة لاصابات خلف التجويف البريتوني كانت نتيجة تجمع السائل في التجويف البريتوني وهو بنسبة (٩٠.١٪)، وإصابات الطحال بنسبة (٢٣.٤٪) و اصابات الكبد بنسبة (١٨.٥٪). و قد لوحظ ان غالبية الحالات تعانى ايضا من اصابات العظام، الصدر او إصابات الجهاز العصبي المركزي كاصابات مصاحبه لاصابات خلف التجويف البريتوني. اصبح العلاج غير الجراحي الطريقة الفعالة في علاج اصابات خلف التجويف البريتوني حيث كان ناجحا في ٩٣.٨٪ من المرضى. وهذا يؤدي إلى قصر مدة البقاء في المستشفى ، والحد من الاحتياج الى نقل الدم وكذلك المضاعفات والوفيات المصاحبة لاصابات البطن. حيث ان نسبة عمليات نقل الدم التي تلقاها المرضى كانت ٧٢.٨٪. كما كانت مدة بقاء المرضى في المستشفى تتراوح بين ١ يوم ١٥ يوماو كان هناك ١٢ مريضا قد لقوا حتفهم بنسبة ١٤.٨٪، ثلاثة منهم لقوا حتفهم بسبب اصابات خلف التجويف البريتوني و ٩ مرضى قد لقوا حتفهم بسبب اصابات مصاحبه لها.

**المناقشة:** تمت مناقشة النتائج و مقارنتها بدراسات مشابهة تحت أسس علمية.

**الخلاصة:** قد اشتملت الدراسة على خلاصة ما توصلت إليه الدراسة من نتائج.

**التوصيات:** قد اشتملت الدراسة على أهم التوصيات التي توصى بها الدراسة.

# دراسة مستقبلية لإصابات خلف التجويف البريتونى بعد صدمات البطن الرضية

رسالة

مقدمة الى كلية الطب - جامعة الإسكندرية

إيفاءً جزئياً لشروط الحصول على درجة

الماجستير فى طب الطوارئ

مقدمة من

ميرفت السيد احمد السيد

بكالوريوس الطب والجراحة

كلية الطب- جامعة الاسكندرية

٢٠١٥

## السادة المشرفون

الأستاذ الدكتور / حبشي عبد الباسط الحمادي.

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وحدة جراحة الرأس والعنق

كلية الطب

جامعة الإسكندرية

# دراسة مستقبلية لإصابات خلف التجويف البريتوني

## بعد صدمات البطن الرضية

رسالة مقدمة من

ميرفت السيد احمد السيد

إيفاء جزئيا للحصول على درجة

الماجستير فى طب الطوارئ

كلية الطب

جامعة الإسكندرية

موافقون

لجنة الحكم على الرسالة

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