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# List of Abbreviations

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|---|---|
| ABG | : Arterial blood gas |
| ALI | : Acute lung injury |
| ARDS | : Acute respiratory distress syndrome |
| ATLS | : Advanced trauma life support |
| BE | : Base excess |
| BMI | : Body mass index |
| CFM | : Cerebral function monitoring |
| CNS | : Central nervous system |
| CO2 | : Carbon dioxide |
| COAD | : Chronic obstructive airways disease |
| CT | : Computerized tomography |
| CVP | : Central venous pressure |
| DPL | : Diagnostic peritoneal lavage |
| ECG | : Electrocardiography |
| ED | : Emergence department |
| EEG | : Electroencephalography |
| EN | : Enteral nutrition |
| etCO2 | : End-tidal CO2 |
| FAST | : Focused abdominal sonography technique |

FDPs : Fibrin degradation products

FiO2 : Fraction of Inspired Oxygen

GCS : Glasgow Coma Scale

Hb : Haemoglobin

HCO3- : Bicarbonate

IAP : Intra Abdominal Pressure

ICP : Intracranial pressure

ICU : Intensive care unit

IV : Intra venous

IVC : Inferior vena cava

O2 : Oxygen

PA : Pulmonary artery

PaO2 : Partial pressure of oxygen

PAOP : Pulmonary artery occlusion pressure

PASG : Pneumatic anti-shock garment

PAWP : Pulmonary artery wedge pressure

PCO2 : Partial pressure of carbon dioxide

PEEP : Positive end expiratory pressure

pH : Power of hydrogen

PN : Parenteral nutrition

RA : Right atrium

RV : Right ventricle

SaO2 : Saturation of oxygen

SpO2 : Pulse oximetry

# List of Figures

# Invasive Intervention in Polytrauma Patients in Intensive Care Unit. Basic Data and Monitoring

*Essay*

Submitted for the Partial Fulfillment of Master Degree in **Intensive Care Medicine**

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# العلاج التداخلى لحالات متعددة الاصابه فى العناية المركزة. المعلومات الاساسيه والمراقبه الدقيقه

## رسالة

توطئة للحصول على درجة الماجستير في الرعاية المركزة


**مقدمة من**

**الطبيب / أحمد فؤاد عبدالونيس**

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**٢٠١٤**

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# Introduction

An attempt has been made by the coordinated efforts of the intensive care and trauma team of a newly established tertiary care institute for designing and improving the trauma care services to realign its functions with national polices by analyzing the profile of polytrauma victims and successfully managing them ***(Goyal et al., 2006)***.

Majority of the polytrauma patients are presented with head injuries, multiple fractures among the long bones, intra-abdominal bleeding and hemorrhagic shock.

Also trauma is one of the leading non-obstetric cause of the maternal Death in as many as 8% of pregnancies. The principle causes of trauma in pregnancy include motor vehicle accidents. Domestic falls and penetrating wounds are involved in 10% of trauma during pregnancy ***(D'Amico et al., 2002)***.

One of the most important concepts during management of polytrauma patients is (The golden hour concept) ***(Joshipura et al., 2004)*.**

The golden hour refers to a time period lasting from a few minutes to several hours following traumatic injury being sustained by a causality, during which there is the

highest likelihood that prompt medical treatment will prevent death. It is well established that the victim's chances of survival are greatest if they receive care within a short period of time after a severe injury; however, there is no evidence to suggest that survival rates drop off after 60 minutes ***(Krug et al., 2000)***.

Many of polytrauma patients have to be admitted to the Intensive care unit, the management of these patients requires the intensive care back-up facilities.

A dedicated intensive care unit team is not just a big blessing but also an essentiality, as these multi-injuries victims require aggressive management of their clinical condition and a thorough monitoring to detect any timely complication. Achieving a clinically stable condition in these patients requires quality nursing care and skilled hands ***(Mirski et al., 2001)***.

Some of the patients who were operated for blunt penetrating injuries did require mechanical ventilation postoperatively as they were very sick. The availability of 24-hours of senior intensivists had further helped in building the faith among team members and improving the outcomes it ensured the delivery of quality intensive care treatment ***(Nathens et al., 2006)***.

And so the wide variations in the set protocols from institution to institution and the various other socioeconomic factors make it extremely difficult to implement the polytrauma guidelines of the developed nations in developing countries ***(Nantulya et al., 2002).***

# Aim of the Work

The aim of this work is to spot on invasive intervention in polytraumatized patient in intensive care unit and to show the importance of the first hours and minutes in life of polytrauma patient (golden hours in polytraumatized patient).

To spot on the importance of the trauma team in management of polytraumatized patient and the role of follow up and monitoring.

# Role of Trauma Team in Management of Polytrauma Patient

Few events in modern medicine are as intense and rewarding as management of polytrauma victims. Unlike many chronic diseases that occur later in a person's life, trauma has a disproportionate impact on society's young and middle-aged people. Victims of severe trauma are often previously healthy people who, sometimes through no fault of their own, become suddenly and gravely ill. Early management issues in the field of the emergency department, and the system of care required for the patient to thrive after initial survival has been assured ***(American collage of surgeons, 2006)***.

Understanding the patient's injuries, management, and prognosis are the first means of understanding the mechanism of his or her injury, with certain mechanisms being associated with greater chance of severe injury and poor outcome ***(American collage of surgeons, 2006)***.

The most critical branch point of many trauma algorithms is between penetrating and blunt trauma, whilst burns and environmental injuries considered separately. Motor-vehicle crashes are the primary cause of blunt injury, followed by falls from heights and direct trauma.

Penetrating trauma-often from gun shots, stab wounds and industrial accidents-is more rare but poses a higher rate of fatality ***(Sauaia et al., 2005)***.

## A) PRIMARY SURVEY

Unlike many areas of medicine where all information is gathered, synthesized and a comprehensive treatment plan is undertaken, trauma requires that injuries that may kill a patient in seconds or minutes should be immediately addressed. The injuries most likely to kill a patient quickly must be excluded before moving onto a more comprehensive examination ***(Mittal et al., 2009)***.

Frequent reassessment is required, since previously unrecognized or seemingly insignificant injuries may become more prominent mandating immediate treatment.

The 'ABCDE' of the primary survey is, in essence, a quick examination to exclude injuries that are immediately life-threatening along with concurrent treatment to permit resuscitation and further examination. The airway doctor in the trauma team undertakes the primary survey and reports the findings to the team leader. Decisions are made for immediate interventions as the primary survey proceeds commencing with airway ***(Mittal et al., 2009)***.