INTRODUCTION

Total intravenous anesthesia **(TIVA)** is defined as the use of I.v. Anaesthetics agent alone to produce general anaesthesia. Although it is difficult to imagine the prospect of surgery without anaesthesia, it is sobering to recall that our specialty is only a little over 150 years old. Initially, anaesthesia was achieved by inhalation of gases and vapours but now intravenous drugs have revolutionized the practice of modern anaesthesia **(Mallon et al., 2002).**

Most patients routinely receive an injection to render them unconscious, while intravenous analgesics, muscle relaxants and vasoactive drugs are regularly used during the maintenance of anaesthesia. Although it has been possible for many years to maintain an adequate anaesthetic using only intravenously administered drugs, most practitioners still use inhaled vapours and gases as maintenance agents in their every day anaesthetic practice **(Mallon et al., 2002).**

There are many reasons why inhaled agents still remain popular for the maintenance of anaesthesia, despite the almost universal use of intravenous induction agents.

In part it is due to habit, while a lack of appropriate equipment for total intravenous anaesthesia. Knowledge and confidence also contributes to the relative unpopularity of intravenous anaesthesia **(Ian et al., 2006)**.The aim of this essay is to provide a broad and a practical guide of total intravenous anaesthesia, setting out the underlying scientific principles and examining the potential and real

advantages of intravenous anaesthesia compared to inhalation techniques, which could be summarized in the following points:

1) Allow rapid recovery of consciousness and psychomotor function by propofol as compared with other agents.
2) Allow high-inspired oxygen concentration in situations where hypoxemia may occur as one-lung anaesthesia, severely ill, traumatized patient and in severely diseased lung (to avoid lung as a route of uptake of inhalation agents).
3) To avoid use of N_2O as in middle ear surgery, bowel surgery and patients with increased intracranial pressure (ICP).
4) To avoid affection of hypoxic pulmonary vasoconstriction reflex which is adversely affected by volatile agents compared with I.v. agents.
5) T1VA is safe in malignant hyperthermia (compared to volatile agents).
6) Allow access as during laryngoscope or bronchoscope when delivery of inhalational agents is difficult.
7) Lesser incidence of nausea and vomiting.
8) To control intraocular pressure in ophthalmic surgery.

Total intravenous anaesthetic technique is applicable in virtually all patients and surgical procedures. Naturally, every patient and procedure will be subtly different from all the others and so the anaesthetic technique will have to be adapted to the particular circumstances of each individual case **(Mallon et al., 2002).**

Nevertheless, there are certain groups of patients which present a broadly similar set of problems and challenges and which can conveniently be discussed as a group. Critically ill patients obviously represent a high risk challenge as a result of acute and severe disturbances of physiology, often superimposed on a background of chronic illness. This essay will consider some of the important aspects in the anaesthetic management, some of high risk patients and will show that TIVA is not only an appropriate technique for application in that group of patients but sometimes it is the anaesthesia of choice.