Introduction
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The world is changing at an ever increasing speed. Before the advent of anaesthesia till 1846, surgery was done only as an emergency and was a dreadful experience for the patient during surgery, sometimes attenuation of surgical pain was accomplished with alcohol, hashih, opium derivatives or with physical methods like packing limb in ice, making limb ischemic with tourniquet, making patient unconscious by blow to the head and by strangulation.

After successful demonstration of ether anaesthesia in 1846 by W.T.G. Morton, inhalation anaesthesia become popular. But due to delayed onset and recovery, nausea, vomiting, sensation of smoothring and drowning due to face mask and inability to put mask in patients with facial injury or deformity, there was need for alternative technique to induce anaesthesia.

History of intravenous anaesthesia, begins in 15th and 16th century, when anatomist Leonardo & coworkers speculated on the functional significance of the heart and blood vessels.

The concept of intravenous anaesthesia is attractive both for the patient as well as for the anaesthetist. For patient, it had the advantage of producing rapid loss of consciousness without excitement, distress or sensation of smoothring after produced by tightly pressed facemask. For the anaesthetist there is advantage of predictable
anaesthesia, which is rapid in onset without coughing or movements.

The use of intravenous agents for total Intravenous anaesthesia (TIVA) began with introduction of rapidly acting barbiturates in 1934. One of the more important studies in the development of TIVA was that reported by Savage and colleagues in 1975 using the steroid althesin and pethidine to supplement oxygen enriched air in the spontaneously breathing patient Subsequent developments included the uses of the carboxylated imidazole, etomidate. Diazepam, medazolam, fentanyl and infusion of ketamine. Disadvantages of cumulative affects of these intravenous agents resulting in long recovery times, more chances of post operative nausea and vomiting and post operative sedation hampered their use in TIVA. Now presently propofol the most recent nonbarbiturate intravenous anaesthetic is introduced in clinical practice by Kay and Rolly in 1977.

TIVA is a natural extension of balanced anaesthesia. TIVA is a technique in which induction and maintenance of anaesthetic state is achieved with intravenous drugs alone, avoiding both volatile agents and nitrous oxide. In this process the patient either breathes spontaneously or is artificially ventilated with an air/oxygen mixture. Newer intravenous drugs now allow reliable anaesthesia to be produced entirely with intravenous anaesthesia and rapid recovery to occur even after long infusion.
TIVA has developed into an acceptable and satisfactory technique which offers many advantages like, high concentrations of oxygen can be administrated, usefulness in difficult situations, provides speedy & complete recovery, there is avoidance of deleterious effects of volatile anaesthetics, minimal cardiovascular depression, a lesser neurohumoral response to surgery, decreased incidence of post-operative nausea & vomiting, no increase in oxygen consumption, no adverse effects on hypoxic pulmonary vasoconstriction reflex the lack of trigger effects for Malignant Hypothermia, reduction in theater pollution and no adverse effects on anaesthesiologists.

There are also some difficulties and limitations of TIVA, because of the disadvantages felt with the conventionally suggested methods of administrations of the drugs used for TIVA, have been suggested to attain drug concentration in the blood quickly at the site of action in the CNS and maintain the desired effect site concentration. However, these methods need appropriate and sophisticated infusion pumps.

There is unpredictable dose response relationship due to varied patients response, use of premedication and bolus dosing. There is unpredictable recovery from anaesthesia and post anaesthetic side effects due to varied distribution and elimination kinetics of the drugs and because of gender and other non physiological factors.
Other disadvantages are cumulative properties of TIVA drugs that prolong the recovery time, drug interactions, possibility of awareness and ability to control depth of anaesthesia, requirement of a separate, dedicated i/v line.

Propofol is the hypnotic most suitable for intravenous infusion in TIVA, because it has a short elimination half life and high clearance. Propofol’s rapid onset of effect and recovery time compares favourably with those of the barbiturates and Etomidate, the elimination rate of Propofol is slightly smaller than those of thiopental and Etomidate and thus the onset of effect is slower. The metabolic clearance rate for propofol exceeds hepatic blood flow, a most important difference from thiopental. In contrast to barbiturates, propofol causes less residual post operative sedation and psychomotor impairment. The incidence of post operative side effects i.e. nausea and vomiting are low.

Opioid analgesics are essential for the suppression of reflex responses to noxious anaesthetic and surgical stimuli during TIVA.

Fentanyl is synthetic opioid, its analgesic potency is 100 times greater than that of morphine but duration of action is short. In clinical doses it has little effect on cardiovascular system. There is often respiratory depression and it is often dose related. In procedures in which marked stimulation is produced, the inclusion of Fentanyl as a component of TIVA not only provides analgesia but also
permits reductions in the required doses of other agents and contributes significantly to hemodynamic stability.

As propofol has very little nociceptive effect, it is generally combined with an analgesic, the popular combination being either propofol with fentanyl or propofol with alfentanil.

Ketamine in subanaesthetic doses with propofol has gained attention in TIVA technique because of its powerful analgesic action in a small dose without causing myocardial and respiratory depression. Ketamine also causes some degree of sympathetic stimulation, which tends to counterbalance, the cardiovascular effects of propofol. One of the main drawbacks with ketamine anaesthesia has been emergence delirium, which propofol seems to be effective in eliminating. Fentanyl’s non availability, it is less economic and its congeners muscular rigidity encouraged ketamine to replace fentanyl as an analgesic for TIVA. So it was thought, worth while to compare propofol in combination with ketamine and fentanyl in TIVA technique in a population of Bundelkhand region.