Introduction
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"Gentlemen, this is no humbug", was the remark of Dr John Collins Warren, the professor of Surgery, when a second year student, WTG Morton, had made clinical trial of Ether on Friday 16th Oct 1846, using a hastily devised glass reservoir incorporating the draw over principle of vaporization, and anaesthetized Edward Gilbert Abbott, a Young printer, while Warren deftly ligated congenital venous malformation in the left cervical triangle in Massachusetts General Hospital, U S A.

Dr Henry J Higelow declared, "I have seen something today, which will go around the earth". Prior to this, nobody had ever dared to use ether in this way but Morton's youthful recklessness and disregard for the status quo convinced the world, and the idea became the sustained practice.

Morton died on 15th July 1868. The inscription on his memorial is "Inventor and revealer of anaesthetic inhalation, by whom pain in surgery was averted and anulled, before whom in all times surgery was agony, since whom, science has control of pain."

Yes, before Morton, surgery was in all times a classic agony and personified torture. Surgeons skill and craft centered around "bold strokes at lightning speed."

Initially, the main objectives of anaesthesia, viz, relief of pain, unawareness and muscular relaxation or paralysis to permit various surgical manipulations were achieved with increasing doses of a single drug like Ether, Chloroform, Trichlorethylene, Cyclopropane and Nitrous oxide in oxygen, but each drug had its advantages as well as dangerous hazards. The worst aspect of single drug anaesthesia was the high rapidly
administered dose to achieve all the three objectives resulting in prolonged elimination and post anaesthetic complications

Induction with ether anaesthesia was often prolonged and stormy when compared to smooth but highly dangerous chloroform anaesthesia, occasionally precipitating death from fibrillation of heart during induction and from yellow atrophy of liver in late chloroform poisoning.

After a gestational period of 100 years, modern anaesthesia began around the 1940s. Intravenous anaesthetic thiopentone sodium introduced by JS Lundy of Rochester in 1934 was held responsible for infamous Pearl Harbour tragedy, killing more victims than Japanese bomb but soon realization of appropriately reduced doses in shock and other clinical situations, restored the useful status of this unique, smooth, dependable and most widely used agent even today. Lundy coined the term "Balanced Anaesthesia" to describe his use of short acting barbiturates in conjunction with general or regional anaesthesia. This practice was further advanced when Laborit and Huguenard of France during the French Indo-China warfare of the late 1940s used a 'lytic cocktail' to prevent development of circulatory shock in the wounded patients. The resulting 'artificial hibernation' induced by simultaneous inj of a barbiturate as analgesic and a tranquilizer was typified by a state of stress free, suspended animation. Actually this was the time when there was a move from the use of single drug therapy to the multidrug therapy, and a specific drug was used for a specific purpose i.e. simultaneous use of a sedative, muscle relaxant and an analgesic to provide a very smooth and quick induction, good muscle relaxation, complete abolition of awareness during the operative period and quick postoperative recovery. This concept not only provided excellent operative conditions but also led to further developments in the anaesthetic practice. As a result of muscle pa-
alysis produced by muscle relaxants, need to control ventilation led to the development of mechanical ventilators, studies on the central and peripheral respiration were made and the concept of post-anaesthetic care units was introduced into the clinical practice.

During the subsequent years, the use of muscle relaxants had become a vitally important aspect of anaesthetic practice. The first use of muscle relaxant was the use of an alkaloid, which was a curare product derived from Chondrodendron Tomentosum by Griffith & Johnson of Montreal in 1942. But it was later noticed that it had disadvantages of its own which included hypotension due to histamine release, anaphylactoid reactions, and cumulation after repetitive dosages. Moreover, to get an alkaloid in a large bulk was also a problem.

So the hunt was on for the development of synthetic and semisynthetic substances for providing muscle relaxation.

In 1947, Bovet described first synthetic muscle relaxant Gallamine but its use was found to be associated with tachycardia. Another major problem with Gallamine was its entire excretion by kidneys, which limited its use in patients with compromised cardiovascular and renal functions.

In 1949, Decamethonium was introduced by Organ, Zaimis and Paton, but subsequently it was found that it readily caused development of phase II block in repeated doses. Introduction of Succinyl Choline by Thesleff and Foides et al. in 1951 revolutionized anaesthetic practice by providing intense blockade of early onset and short duration, thereby greatly easing the maneuver of tracheal intubation.
Over next few decades, many newer agents were introduced into the practice that included Fazadinium bromide, Alcuronium and Pancuronium but all the agents had some side-effects. Out of these, only pancuronium which was introduced in 1967, could gain wide spread popularity but because of its cumulative property, pancuronium was not found to be very safe during prolonged duration of surgery and during infusions.

Thus, to date, numerous muscle relaxants have been introduced into the clinical practice but none has so far been able to fulfil the required standards of an ideal muscle relaxant, which are to mention a few-early onset, prolonged duration of action, rapid recovery, no dependence on liver and kidney for their elimination, no organ specific side-effects, no histamine release and no cumulation.

The simultaneous introduction of two muscle relaxants with intermediate duration of action i.e. Atracurium and Vecuronium in the early 1980s, although not ideal but considered to be near ideal, further revolutionized clinical anaesthesia by providing excellent muscular relaxation, faster onset, a more rapid and measurable recovery of residual block than in the case of longer acting agents. This development -

1. encouraged tracheal intubation by the use of nondepolarizing relaxants
2. made it more convenient to provide paralysis by continuous infusion
3. facilitated measurably improved post-operative neuro-muscular function

The virtual lack of cardiovascular effects of vecuronium over a very wide dose range established a bench mark for other relaxants, while the degradation of Atracurium via the chemical mechanism of "Hofmann elimination" curtailed any important influence of biochemical abnormalities on its pattern of blockade.
The first mention of the use of muscle relaxants by continuous infusion is of suxamethonium, but because of reports of development of phase II block and delay in recovery, its use was soon abandoned. Earlier, non depolarizer muscle relaxants were not used by infusion technique for the fear of their cumulative property and high incidence of post-operative recurarization.

Since both Atracurium and Vecuronium have been shown to possess no cumulative property (Noelge G., Hinsken H., Ruzello W., 1984) and cardiovascular side effects (Boog et al., 1980, Payne & Hughes 1981) Hence these drugs have been advocated to be used by continuous infusions rather than intermittent bolus doses, in order to obtain a consistent and near total paralysis of muscle throughout surgery, particularly of longer duration.

Therefore, considering all these properties of Vecuronium and Atracurium, the present study was aimed -

1. to evaluate the efficacy of continuous infusions of Atracurium and Vecuronium in producing consistent neuro-muscular blockade throughout the surgery

2. to observe, if there was any delay in recovery after the cessation of such infusions

3. to compare continuous infusion method with intermittent bolus doses, to provide a consistent neuromuscular blockade and rapid recovery

4. To evaluate the cardiovascular stability and any side effects during either techniques