Introduction
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The state of anaesthesia 50 years ago was, by the standards of today, primitive. Some volatile agents, intravenous agents, local infiltration and some nerve blocks were used by the anaesthetist of that time. A tracheal tube was not usually passed before the introduction of neuromuscular blocking drugs, and intubation was considered as an art to be learnt with considerable dedication and hardship. Following the introduction of neuromuscular blocking drugs, in anaesthetic practice, the role of tracheal intubation has undergone a complete metamorphosis. The incontrovertible advantages of intubation in the safe maintenance of airway has changed the indication of intubation from specific need to almost a routine use in general anaesthetic practice. Thus, the use of muscle relaxant has become an important aspect of modern anaesthesia.

Succinlycholine, introduced by Thesleff and Foldes et al in 1952, revolutionized anaesthetic practice by providing intense neuromuscular blockade of very rapid onset and ultra short duration, thereby greatly easing the maneuver of tracheal intubation. Since then, it has been widely used for more than 40 years, as a muscle relaxant of choice for most of the patients, especially those requiring emergent intubation. But, its use is associated with various side effects, some of which are in-convenient while others may be potentially harmful. In addition, its use may be contraindicated in some situations.

The unwanted side-effects which may be encountered with suxamethonium includes: muscle fasiculations, post-operative myalgia, hyperkalemia, increased intraocular, intragastric as well as intracranial pressures, and cardiovascular effects which include varied forms of cardiac
arrhythmias especially bradyarrhythmias and asystole. In addition to these potential problems, prolonged apnoea may be encountered in individuals with atypical pseudocholinesterase. It may also induce malignant hyperthermia and myoglobinuria, a grave situation in susceptible patients. Thus, it falls short of an ideal muscle relaxant due to its potentially hazardous side effects, although it has the advantage of rapid action and quick recovery. Thus, the need for a rapid acting non-depolarizing neuromuscular blocking agent to replace suxamethonium for rapid sequence induction of anaesthesia has therefore been obvious for many years.

The properties of an ideal neuromuscular blocking agent includes –

i) non-depolarizing mechanism of action
ii) rapid onset and short duration of action
iii) rapid recovery
iv) non cumulative effect
v) no cardiovascular effect
vi) no histamine release
vii) reversible by cholinesterase inhibitors
viii) high potency and
ix) it should have pharmacologically inactive metabolites

The search for better drugs to meet the properties of an ideal neuromuscular blocking agent, led to the development of new non-depolarizing neuromuscular blocking drugs. Recently, developed drugs of intermediate duration includes vecuronium and atracurium which are, to a major extent, free from various side effects encountered with suxamethonium. However, even after intubating doses, onset time is relatively slow as compared with that of suxamethonium for rapid tracheal intubation. The use of high initial bolus dose of either atracurium or
Vecuronium shortens the onset time, but at the expense of a prolonged duration of action, which may be undesirable in certain situations.

The new addition in the list of neuromuscular blocking agents is rocuronium bromide, which fills the gap for an agent, with rapid onset while lacking the potentially adverse features associated with suxamethonium, retaining a medium duration of action and meeting most of the requirements of an ideal neuromuscular blocking agent.

Work carried out by various workers has confirmed the long held belief, that a rapid onset of action can be produced by compounds of relatively low potency. This concept was in part the basis for the development of rocuronium bromide.

Rocuronium bromide (ORG 9426), the 2 morpholino 3 disacetyl 16 N allyl pyrroolidino derivative of vecuronium, has proven to be five to seven times less potent than vecuronium with an ED$_{95}$ of 0.3 mg/kg as compared to an ED$_{95}$ of 0.056 mg/kg of vecuronium. This lack of potency is thought to be an important factor in determining the onset of neuromuscular block.

Thus, rocuronium has narrowed the gap between the onset of action of suxamethonium and the non-depolarizing neuromuscular blocking drugs. Rocuronium, 0.6 mg/kg (2xED$_{95}$) was found to have and onset of action of 60-90 seconds at the adductor pollicis muscle, comparable with that of suxamethonium. At appropriate dosage (0.6-1.2 mg/kg) rocuronium may provide favourable conditions for tracheal intubation.

This new aminosteroid neuromuscular blocking drug is devoid of many side effects which is encountered with suxamethonium. It has practically no effect on autonomic ganglia, there is no evidence of histamine release after
its use, possess a very stable cardiovascular profile and is stable in aqueous solution. Although, some studies suggested that there is evidence of a slight vagolytic effect with rocuronium, but in doses upto 1.2 mg/kg, it has minimal cardiovascular effects in both healthy patients and those with cardiovascular disease.

It may be used, with ease, in neurosurgical patients and in patients with penetrating eye injury, since there is no danger of increase intracranial or intra ocular pressure respectively which is an associated risk with the use of suxamethonium. Hyperkalaemia does not occur with the use of rocuronium and unlike other non-depolarizers, its metabolite, 17 desacetyl rocuronium does not have any neuro muscular blocking activity.

Preliminary studies with Org 9426, suggested that it may very well fit in the category of an ideal muscle relaxant. Subsequent extensive clinical trial showed that it has a rapid onset time with favourable condition for tracheal intubation, an intermediate duration of action, coupled with cardiovascular stability, virtually no histamine release and other side effects. These characters make rocuronium the muscle relaxant, which best approaches the requirements of an ideal neuromuscular blocking drug.

Weighing the pros and cons of every drug, if a rapid tracheal intubation is required in certain situations where suxamethonium is contraindicated or may prove harmful, it is suggested that rocuronium may very well take its place.

Considering the various attractive properties of rocuronium, the present study is undertaken to evaluate the intubating conditions and cardiovascular effects of rocuronium and compare it with suxamethonium and vecuronium.