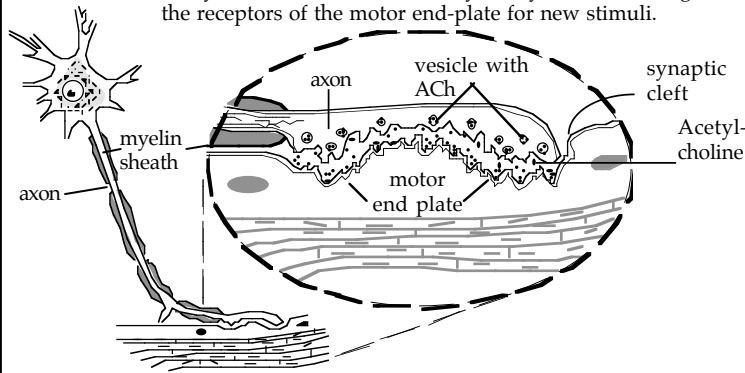


Neuromuscular Blockade

Normal Muscle Contraction:

1. The neuron releases acetylcholine, which binds with the receptors of the motor end-plate, changing its permeability.
2. The permeability change causes depolarization, which releases Calcium. Increased Ca in the cytoplasm causes bridging of actin-myosin proteins and muscle contraction.
3. Acetylcholinesterase then destroys acetylcholine, freeing the receptors of the motor end-plate for new stimuli.



2 Types of Blocking Agents:

- Depolarizing - binds to the receptors of the motor end-plate causing depolarization, which prevents subsequent activation
- Nondepolarizing - binds acetylcholine, making it impossible to depolarize the muscle.

Indications:

1. Facilitate intubation
2. Facilitate mechanical ventilation
3. Treat muscle spasm associated with tetanus, OD's, seizures
4. Decrease work of breathing, Decrease tissue O₂ demand
5. Management of critically high Intracranial Pressure

Prior to Administration:

1. Obtain baseline serum creatine and repeat q 2 - 4 days
2. It is imperative to administer sedative and/or analgesic
3. Obtain baseline response to peripheral nerve stimulator

SCCM

Guidelines:

1. The indications for NMB are relevant only after correctible causes of agitation have been treated without success (e.g., hypoxia, hypoglycemia, hypernatremia, drug side effect)
2. Most patients can be managed with Pancuronium as well as with any other type of NMBA.
3. Assess clinically with Train-of-Four to achieve 1 - 2 twitches.
4. Should also be given eye care and DVT prophylaxis.

Prolonged Paralysis:

Occurs in 5-10% of patients who have been given NMBA > 24 h. Risk is increased when given concurrently with corticosteroids.

Drug Dosage:

There is wide variability in dosage requirements for individual patients and these requirements may change over time. Also, reduce the dosage for these patients:

1. the elderly
2. those with hepatic or renal dysfunction
3. those with conditions or factors which increase the sensitivity to NMB's (see next page)

Administration:

If rapid onset needed, give full loading dose.
 If rapid onset not needed, give 1/4 - 1/2 the loading dose.
 Slower IV push rate ↓ histamine release with certain agents.
 Muscles stop moving in the following order:

1. Eyes, face, neck
2. Extremities, abdomen, chest
3. Glottis, diaphragm