Post-Proning Plexopathy in COVID-19 Critical Care Patients

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INTRODUCTION

- Critical care admissions can be associated with **polyneuropathy** and **myopathy** presenting as **flaccid symmetrical paralysis**[1]
- **COVID** patients admitted to intensive care tend to undergo **proning** as a means to reduce mortality from ARDS[2]
- Proning can be associated with accidental injury, including **brachial plexus damage** which presents more distinctly[3]
- This study aims to **identify these injury patterns** and provide **guidance** for specialist **referral, management and prevention**.

METHOD

- Retrospective review of data
- Collected from PICS e-Record
  - Demographics
  - Comorbidities
  - Critical care admission
- Assessed on rehabilitation ward
  - Motor & Sensory (MRC)
  - Neuropathic pain signs
  - Neurophysiology tests
- Referral pathway implemented via allied health professionals using focused **triage tool**[4]:

Triage Criteria
1. Asymmetric motor deficit
2. Severe muscle wasting
3. Altered Sensation
4. Defined nerve distribution

Define Anatomical Site
- Root/trunk/cord/nerve
- Lower motor neurone signs
- Proximal myopathy
- Asymmetric bilateral signs
- Coexisting myoneuropathy

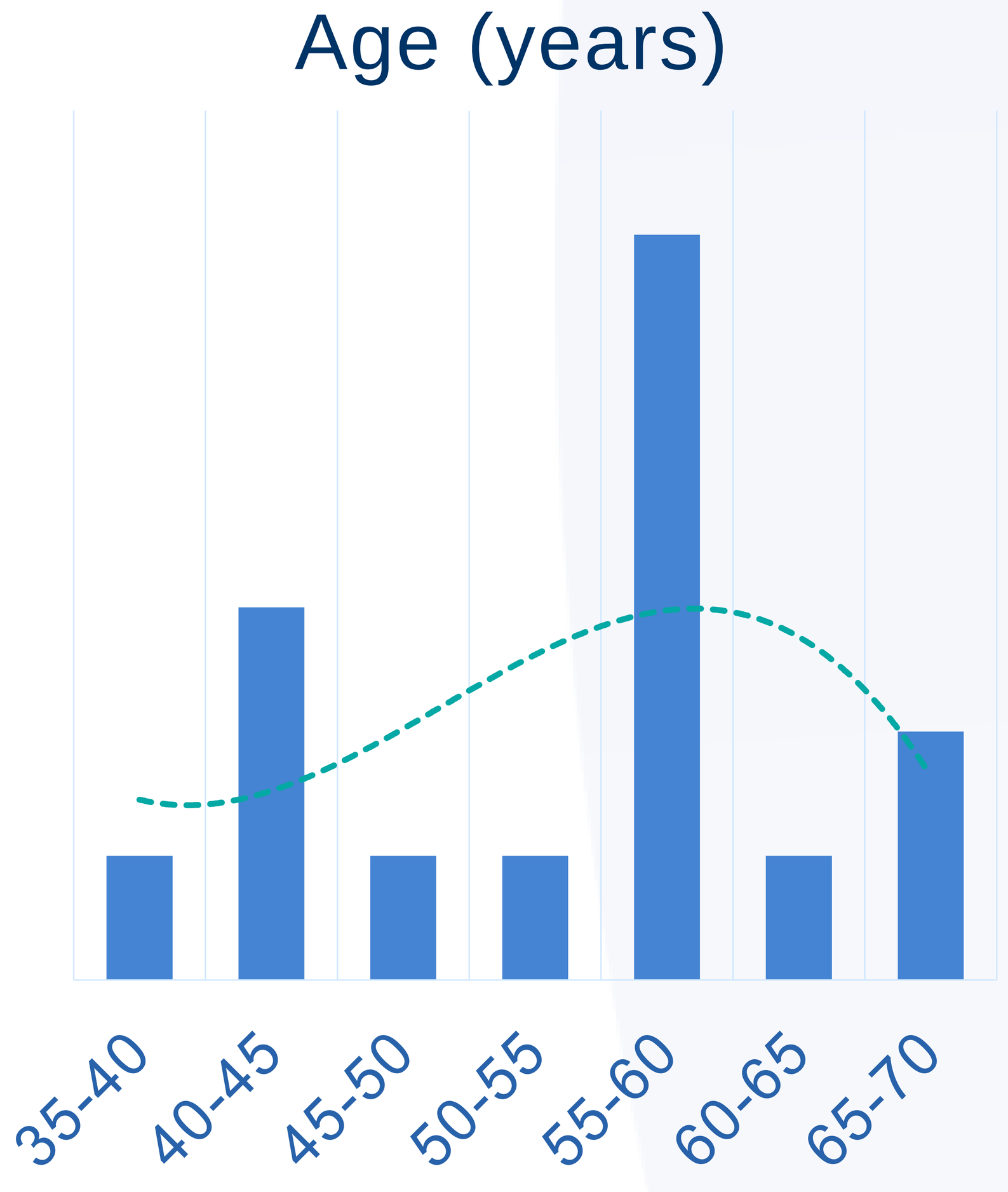
Assess Severity

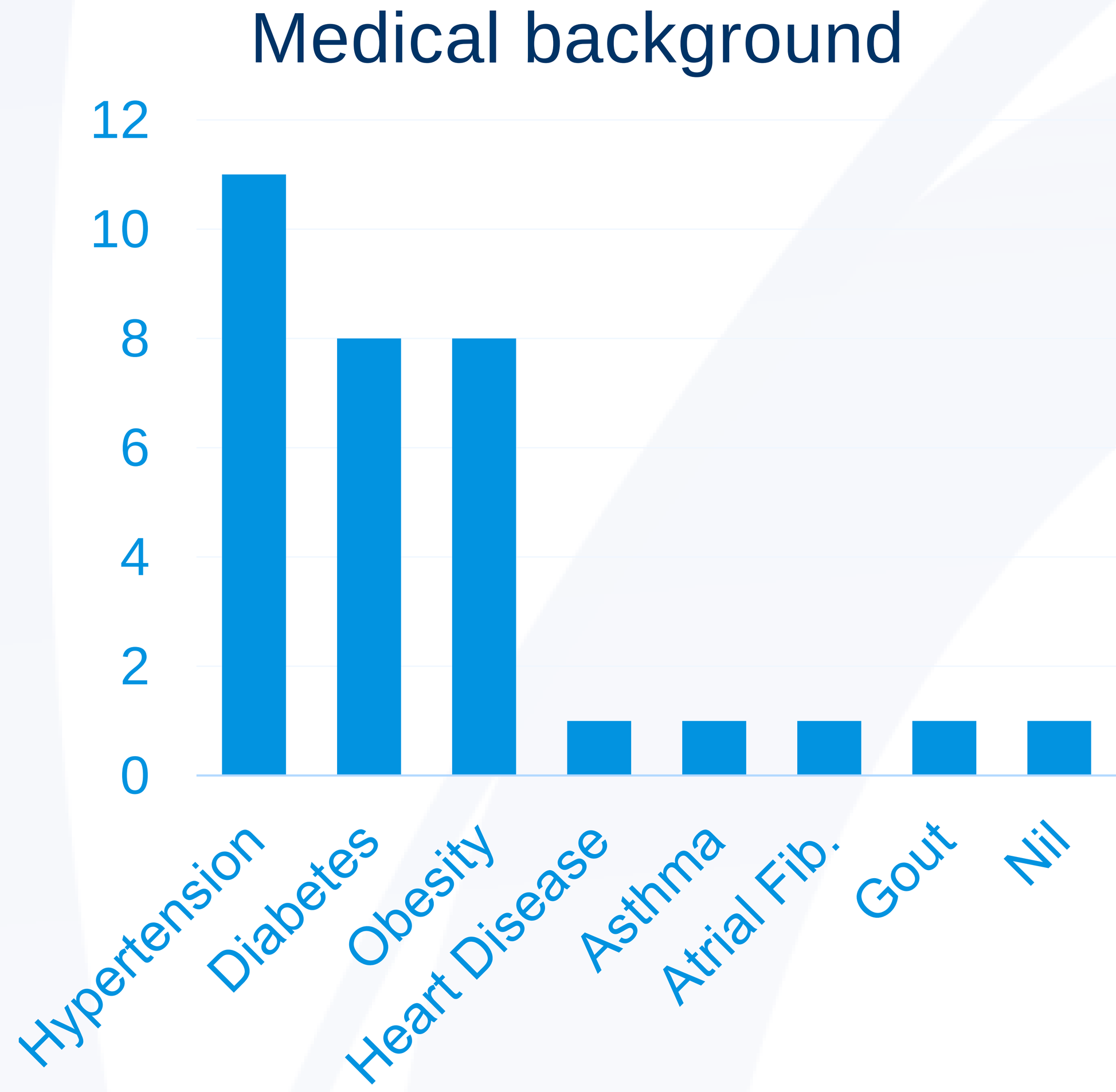
High Grade
- Severe muscle wasting
- Severe weakness/paralysis
- Neuropathic pain
- Positive Tinel's sign
- Dry skin (autonomic sign)
- >6 weeks

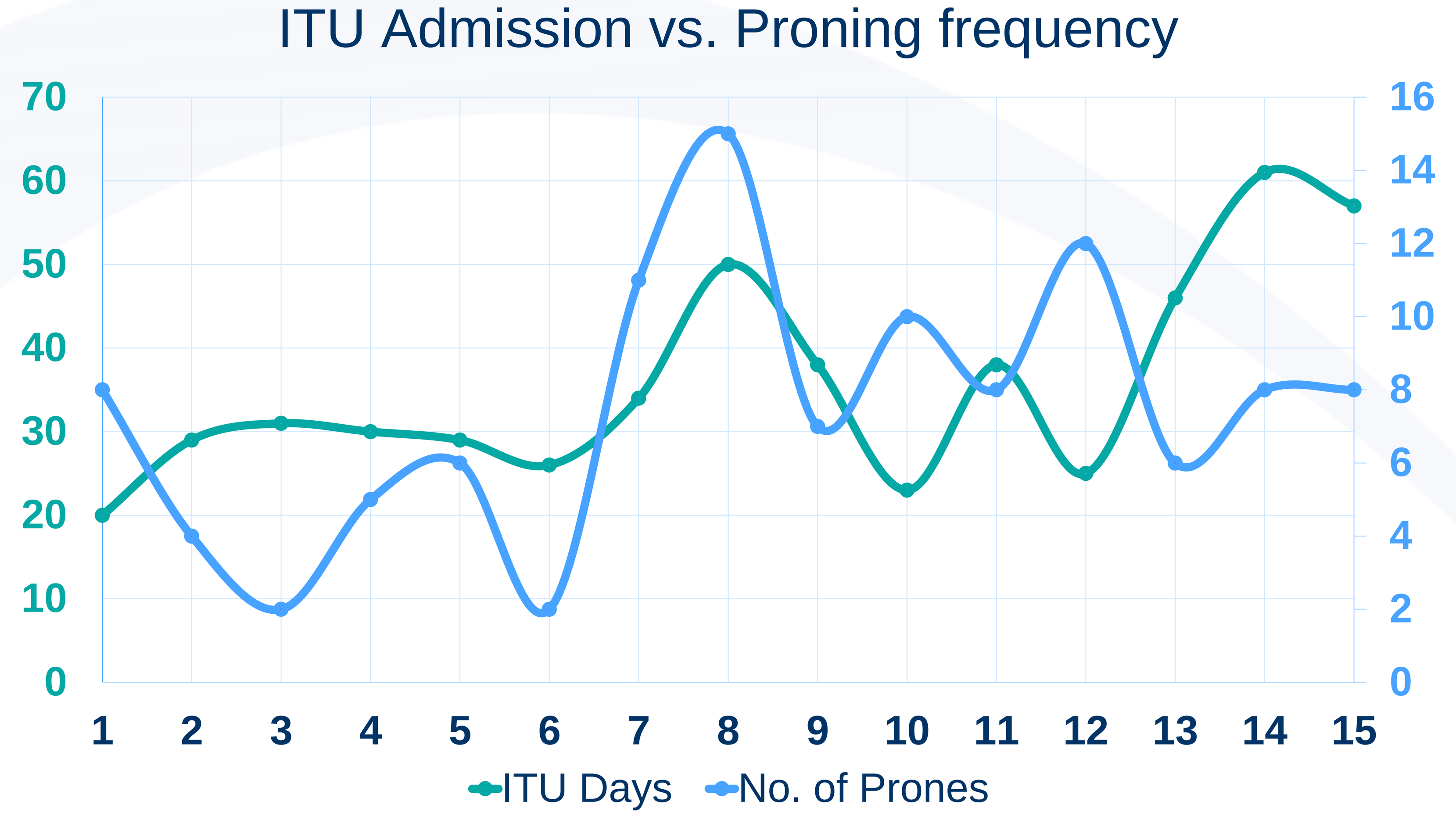
Low Grade
- Mild muscle wasting
- Muscle weakness/paralysis
- Incomplete sensory loss
- Painless nerve palsy
- Negative Tinel's sign
- No autonomic signs
- Rapid, complete recovery
- Resolves by 6-8 weeks
- Can still deteriorate

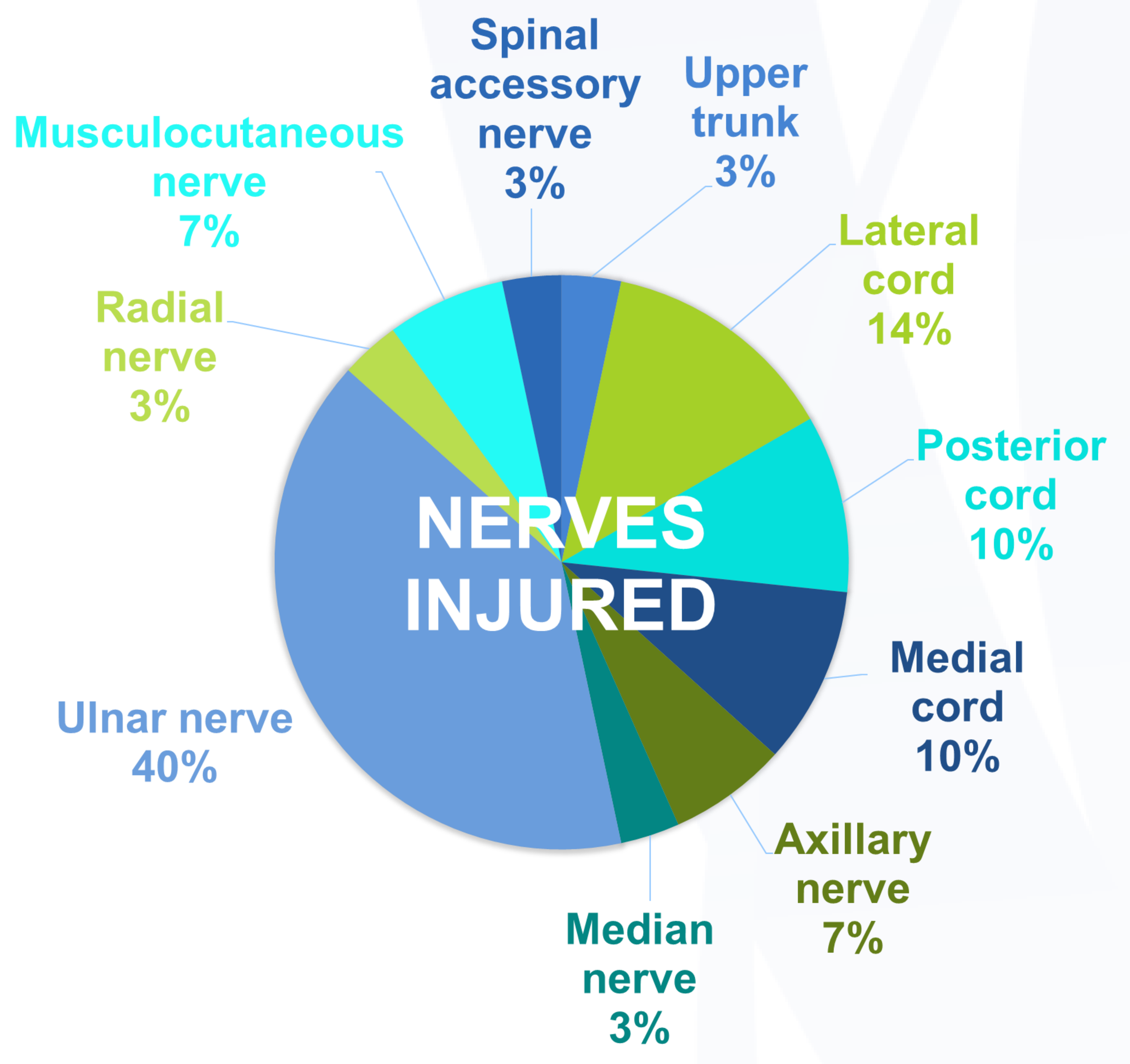
REFER to Peripheral Nerve Clinic if high grade injury or signs persisting >6 weeks

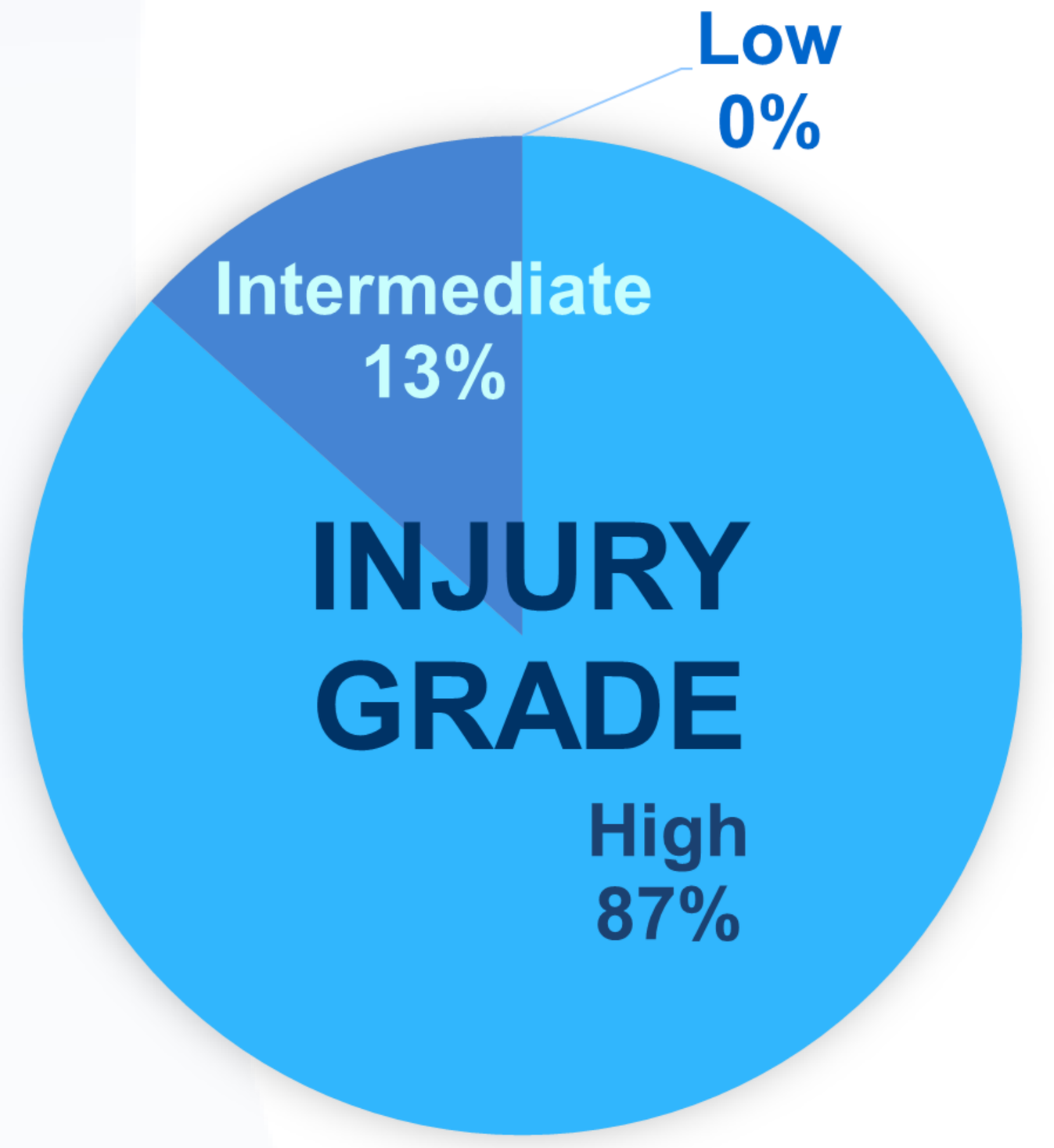
RESULTS

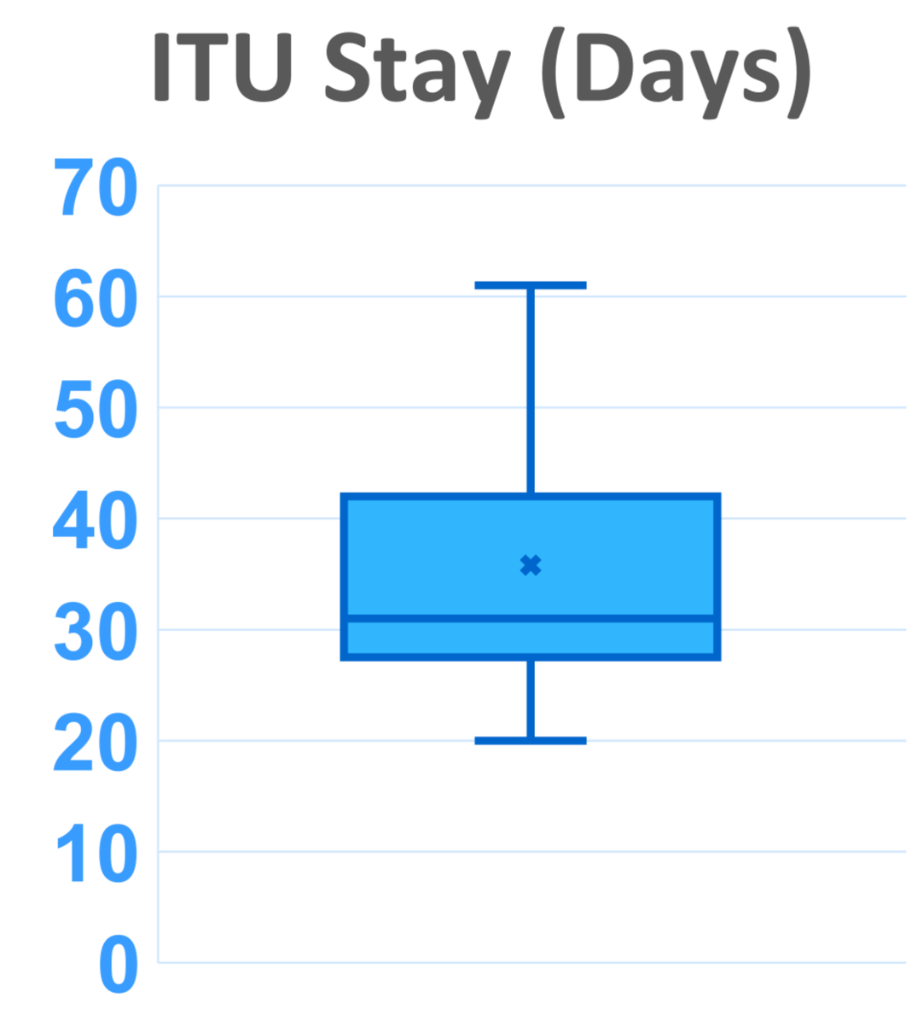


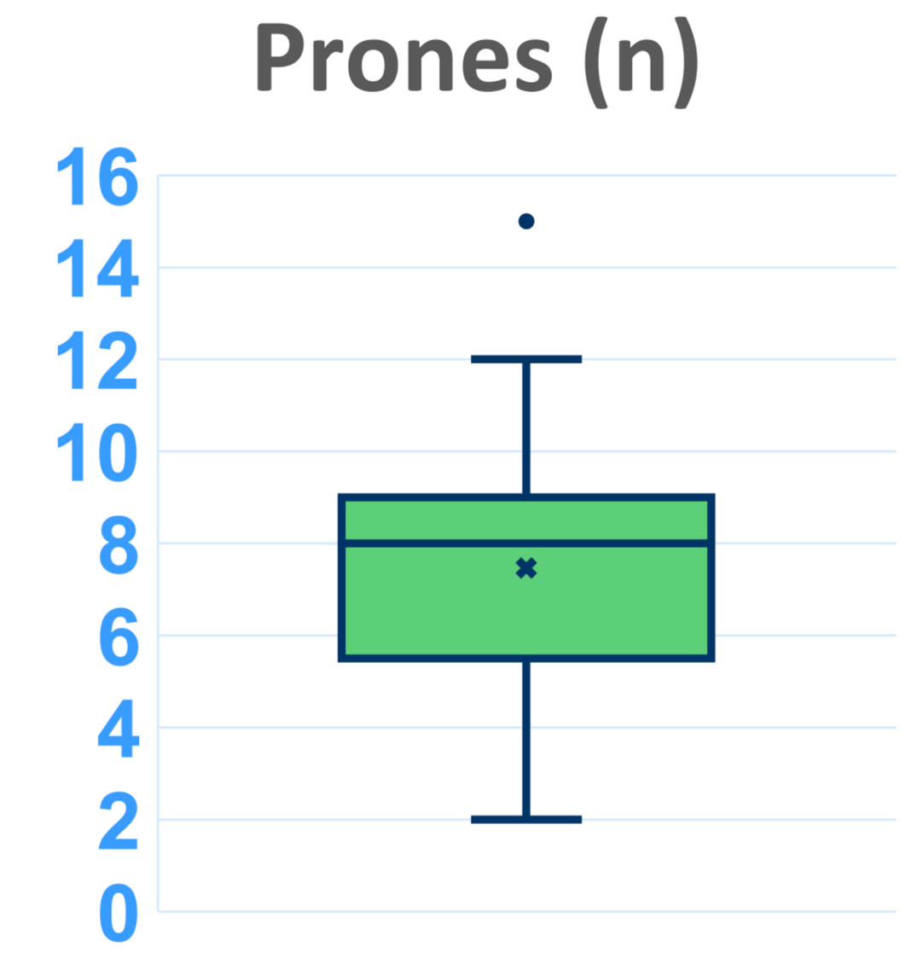












Total Patients	15
Nerves injured	30
Male : Female	12 : 3
Neuropathic pain	15
Motor weakness	15
Electromyography	14
Imaging scans	5
Glenohumeral dislocation	3

RECOMMENDATIONS

Support provided for **Physiotherapists** to:
- **Advise** ward staff in patient management
- **Recognise** and escalate injuries quickly
- **Intervene** early to optimise rehabilitation

Guidance issued for **Critical Care** personnel to:
- Maintain neutral spine alignment
- Place arms in "swimmer's" position: one arm abducted to 70 degrees, the other by their side
- Partially rotate head towards abducted arm
- Alternate arm and head position every 2 hrs
- Avoid neck extension and lateral neck flexion
- Avoid shoulder extension
- Avoid elbow flexion >45 degrees
- Avoid pressure over axillary crease
- Avoid pressure over ulnar nerve at elbow
- Avoid pressure over peroneal nerve at knee
- Avoid knee extension

Emphasis placed on **patient education to**:
- Encourage passive exercising
- Guide positioning to avoiding pressure areas

Case reviews are ongoing to further understand:
- Common **injury patterns** and their outcomes
- Predictive patient and environmental **factors**
- Presence of **neuroinflammatory** mechanisms

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