

UK Practice for the Electrodiagnosis of MND

Results

Mark Baker
Stephan Jaiser

Design

- Form A
 - Practice parameters for individual doctors
 - One per doctor, potentially multiple per centre
- Form B
 - Individual clinical cases

Form A

Individual Practice

FORM A : Please complete once for each Clinical Neurophysiologist

Postcode of Centre (Please complete)	
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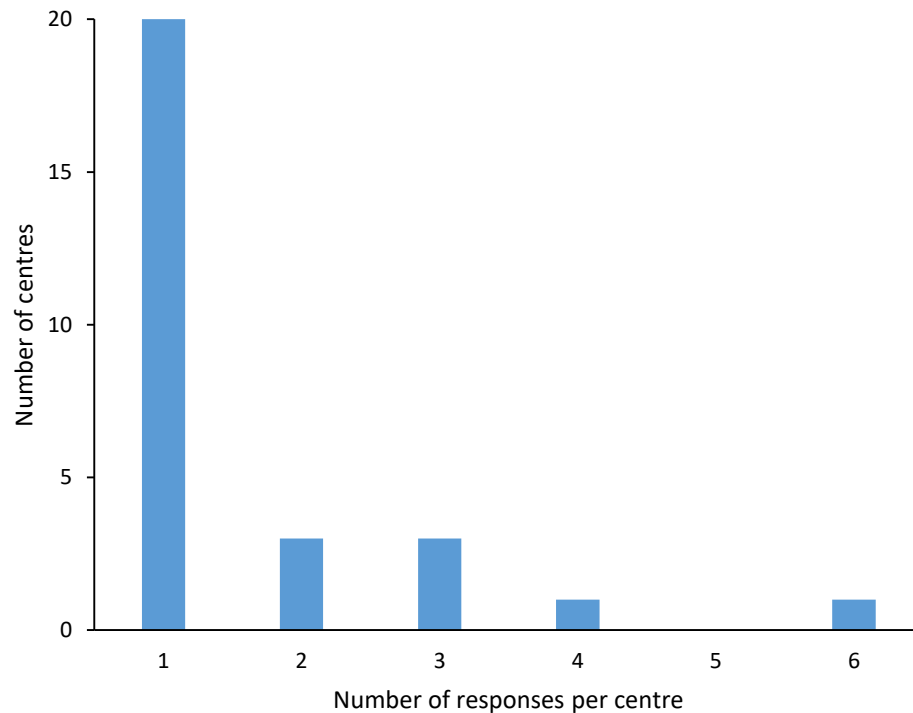
1. Approximately how many referrals with provisional diagnosis of MND do you receive at your centre per year?	
2. What is the allocated appointment time for a patient referred with a provisional diagnosis of MND? (minutes)	
3. Do you use published guidelines for the electrodiagnosis of MND?	Yes / No
4. If so please give reference(s)	
5. Do you use a local protocol for the electrodiagnosis of MND?	Yes / No
6. If so please attach copy	Attached / not applicable
7. Have you performed a local or regional audit on the electrodiagnosis of MND?	Yes / No
8. If so please provide a summary and main recommendations.	
9. When patient referred with suspected MND, does needle EMG include routinely?	
- Muscle sampling in 4 body regions (i.e. cervical, thoracic, lumbo-sacral and bulbar)?	Yes/ No
- At least 2 muscles in each body region?	Yes/ No
- Muscles sampling on one side of the body in 4 body regions?	Yes/ No
- Muscles sampling on two sides of the body in 4 body regions?	

10. Name the most common 2-3 muscles sampled in the bulbar region?											
11. Name the most common 2-3 muscles sampled in the cervical region?											
12. Name the most common 2-3 muscles sampled in the thoracic region?											
13. Name the most common 2-3 muscles sampled in the lumbosacral region?											
14. Does needle EMG examination include recording motor unit parameters (amplitude, duration, firing rate, stability...etc)?	Yes/ No										
15. Please state the number of muscles tested in each region when patient presents with <u>fasciculations and no evidence of denervation</u> is found on needle EMG. (If no muscles tested put 0)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">Region</th> <th style="width: 70%;">Number of muscles tested</th> </tr> <tr> <td style="text-align: center;">Cervical</td> <td></td> </tr> <tr> <td style="text-align: center;">Lumbosacral</td> <td></td> </tr> <tr> <td style="text-align: center;">Thoracic</td> <td></td> </tr> <tr> <td style="text-align: center;">Bulbar</td> <td></td> </tr> </table>	Region	Number of muscles tested	Cervical		Lumbosacral		Thoracic		Bulbar	
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Lumbosacral											
Thoracic											
Bulbar											
16. Please state the number of muscles tested in each region when patient presents with <u>fasciculations and denervation</u> is found on needle EMG. (If no muscles tested put 0)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">Region</th> <th style="width: 70%;">Number of muscles tested</th> </tr> <tr> <td style="text-align: center;">Cervical</td> <td></td> </tr> <tr> <td style="text-align: center;">Lumbosacral</td> <td></td> </tr> <tr> <td style="text-align: center;">Thoracic</td> <td></td> </tr> <tr> <td style="text-align: center;">Bulbar</td> <td></td> </tr> </table>	Region	Number of muscles tested	Cervical		Lumbosacral		Thoracic		Bulbar	
Region	Number of muscles tested										
Cervical											
Lumbosacral											
Thoracic											
Bulbar											
17. Please state the number of muscles tested in each region when patient presents with <u>weakness in one body region</u> (e.g. unilateral foot drop) (If no muscles tested put 0)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">Region</th> <th style="width: 70%;">Number of muscles tested</th> </tr> <tr> <td style="text-align: center;">Cervical</td> <td></td> </tr> <tr> <td style="text-align: center;">Lumbosacral</td> <td></td> </tr> <tr> <td style="text-align: center;">Thoracic</td> <td></td> </tr> <tr> <td style="text-align: center;">Bulbar</td> <td></td> </tr> </table>	Region	Number of muscles tested	Cervical		Lumbosacral		Thoracic		Bulbar	
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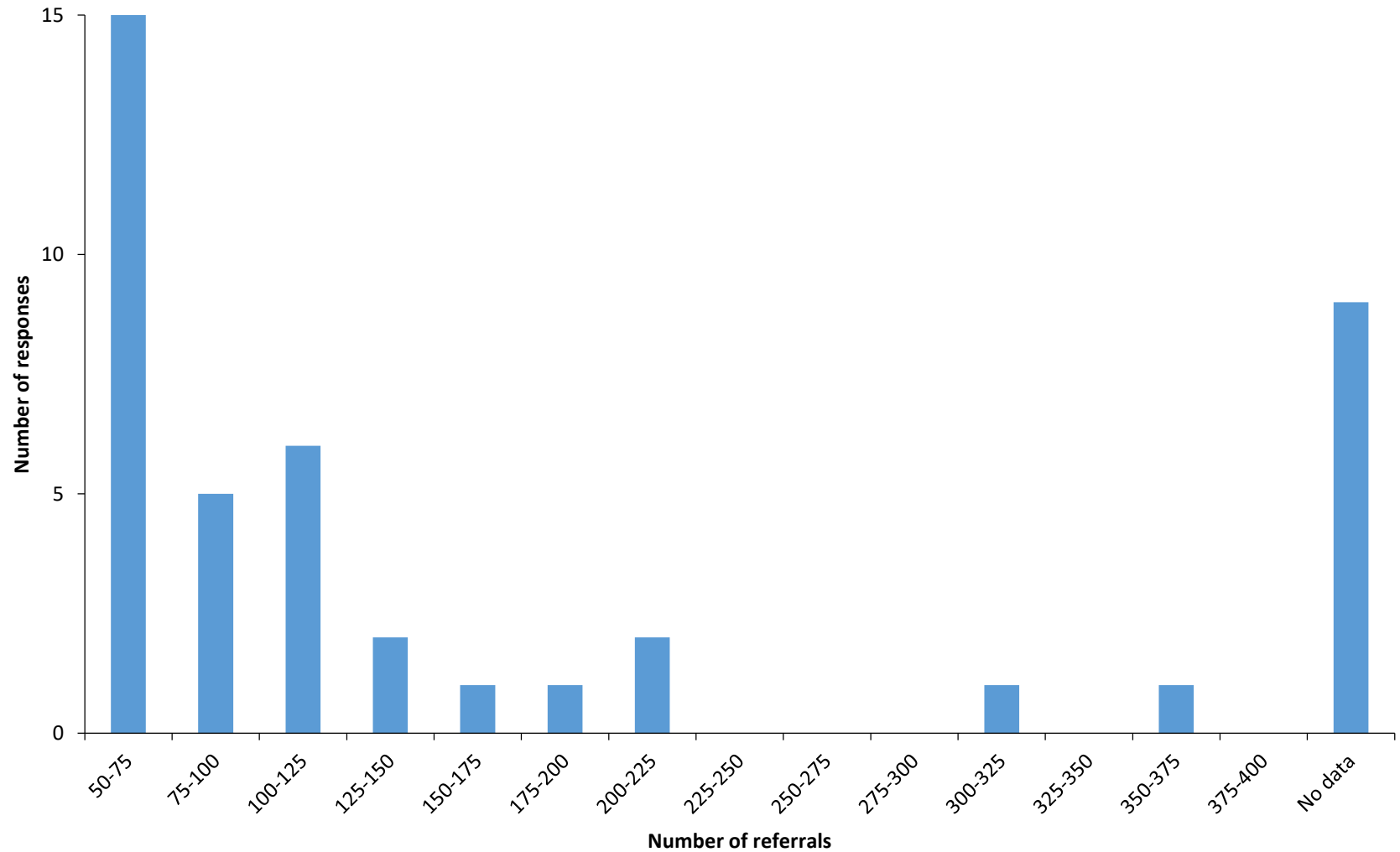
18. Please state the number of muscles tested in each region when patient presents with <u>weakness in two body regions</u> (cervical and lumbosacral) (If no muscles tested put 0)	Region Cervical Lumbosacral Thoracic Bulbar	Number of muscles tested
19. Please state the muscles tested in each region when patient presents with <u>bulbar symptoms only</u> . (If no muscles tested put 0)	Region Cervical Lumbosacral Thoracic Bulbar	Number of muscles tested
20. Do you perform needle EMG if patient is taking		
- Warfarin		Yes/ No
- Oral anticoagulants (excluding aspirin)		Yes/ No
21. Do you perform other neurophysiological tests NCS routinely Segmental/proximal motor studies (for assessment of MFMNCB) If yes, please state the reason for doing this test: Repetitive nerve stimulation: If yes, please state the reason for doing this test: Motor unit number estimation (MUNE): If yes, please state the reason for doing this test: Transcranial Magnetic Stimulation: If yes, please state the reason for doing this test: Others – If yes, please state		Yes/ No Yes/ No Yes/ No Yes/ No Yes/ No Yes/No Yes/No
22. Do you perform a follow up study routinely? If yes- Do you specify a recommended time of a repeat study?		Yes/ No

General

- Number of doctors 45
- Number of centres 28



Number of referrals

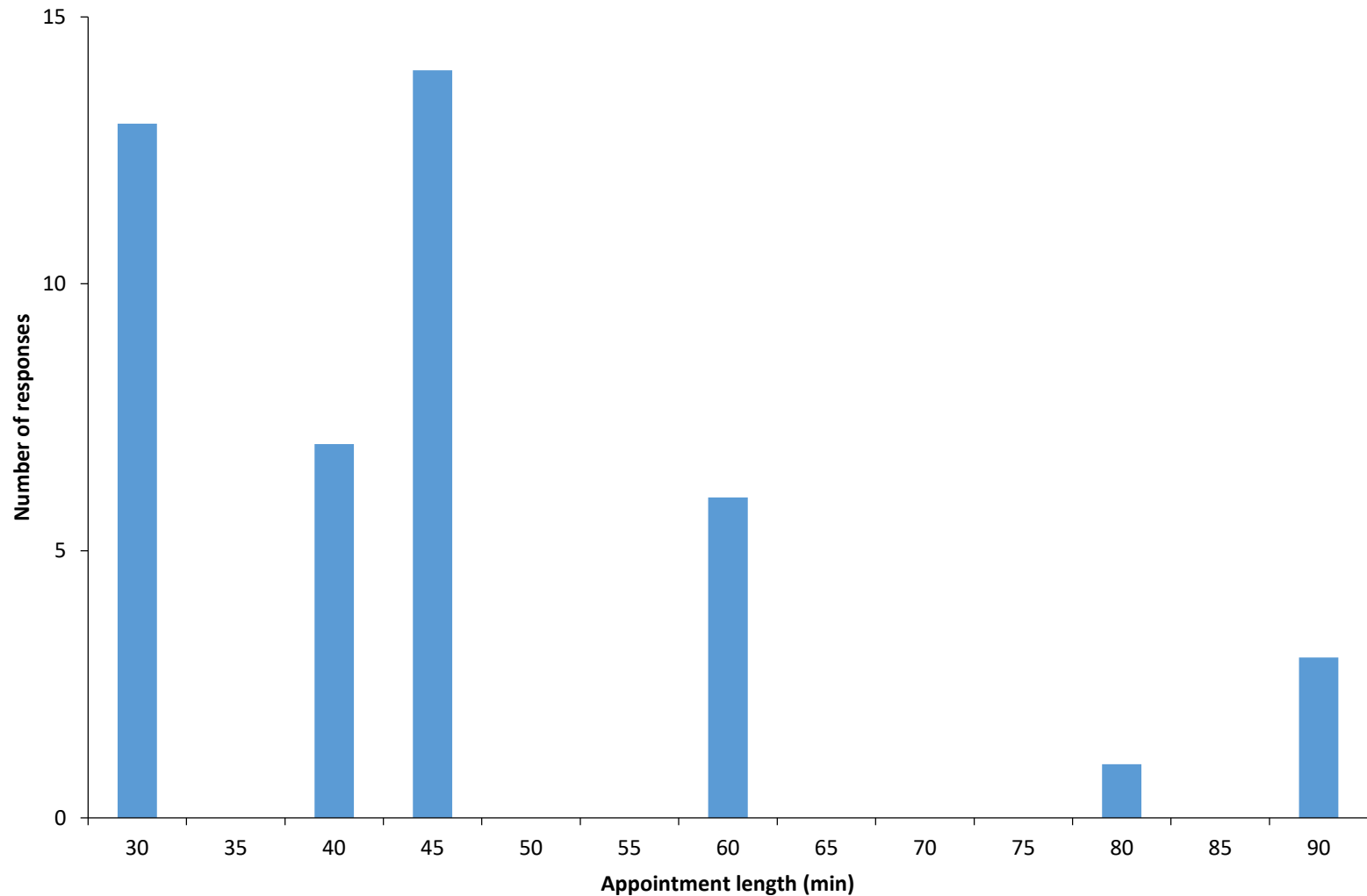


Number of referrals

- Centres with multiple responses

Responses per centre	Number of referrals
2	10-120
2	30
2	30
2	36-75
2	40-45
3	96
3	170-350
6	30

Appointment length



Appointment length

- Centres with multiple responses

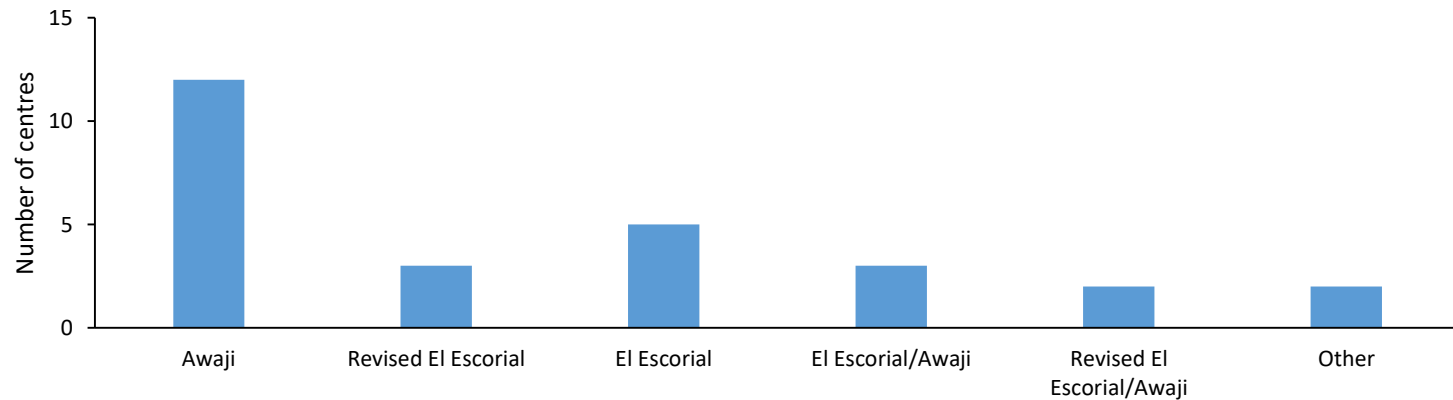
Responses per centre	Appointment length (min)
2	30
2	30-45
2	40-60
2	80-90
2	90
3	40-45
3	45
6	30-45

Guidelines

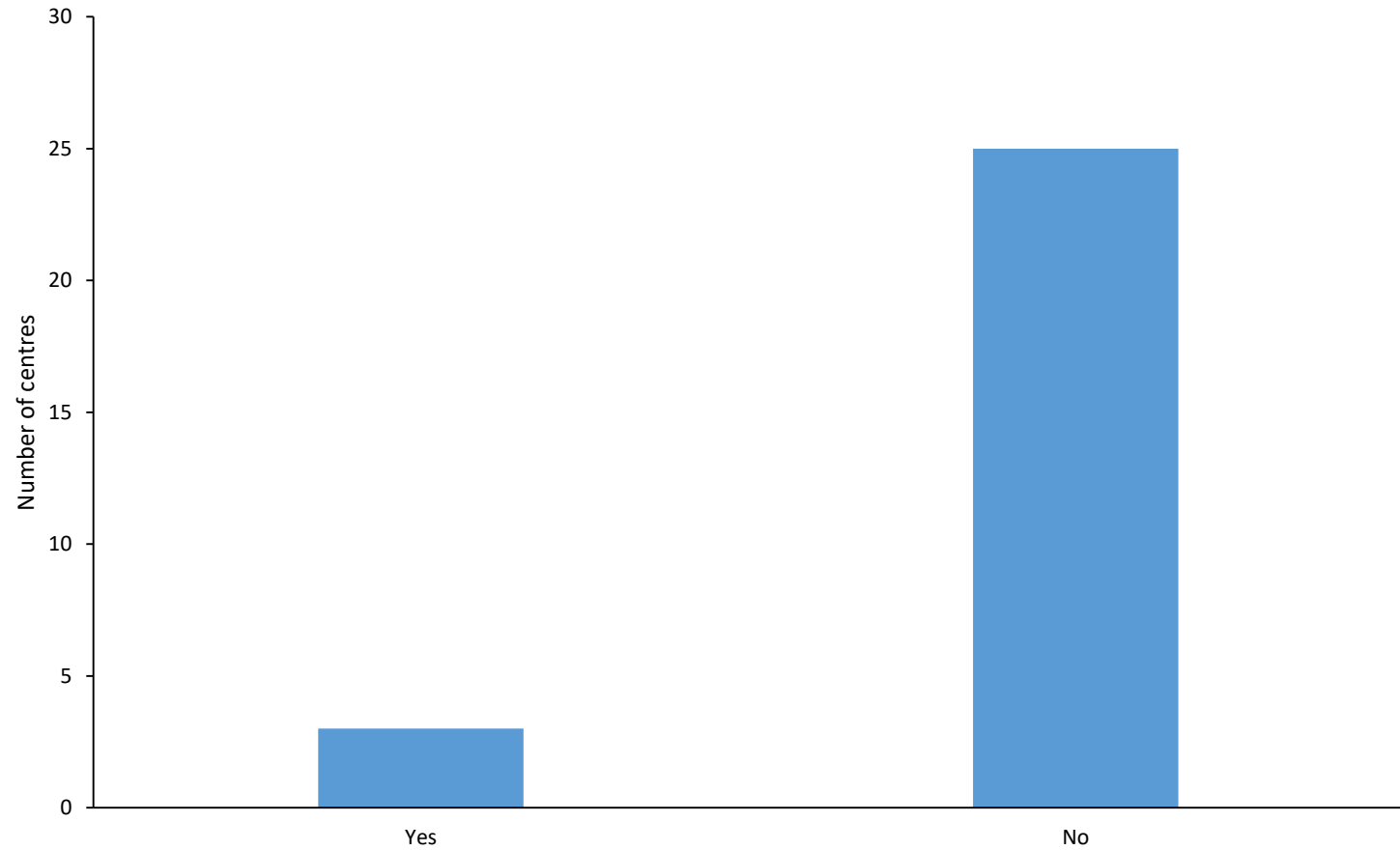
- In use?



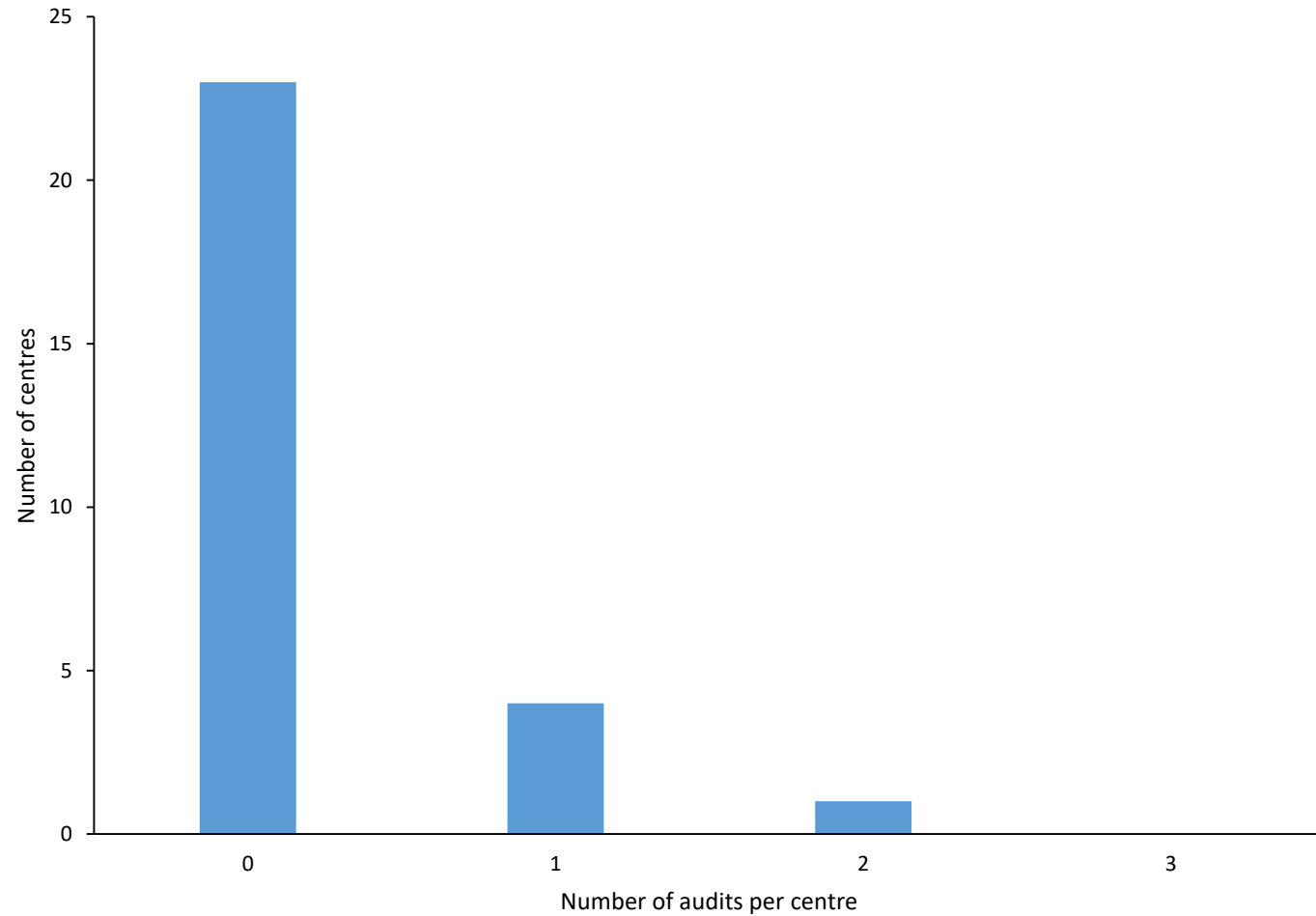
- Which ones?



Local protocol

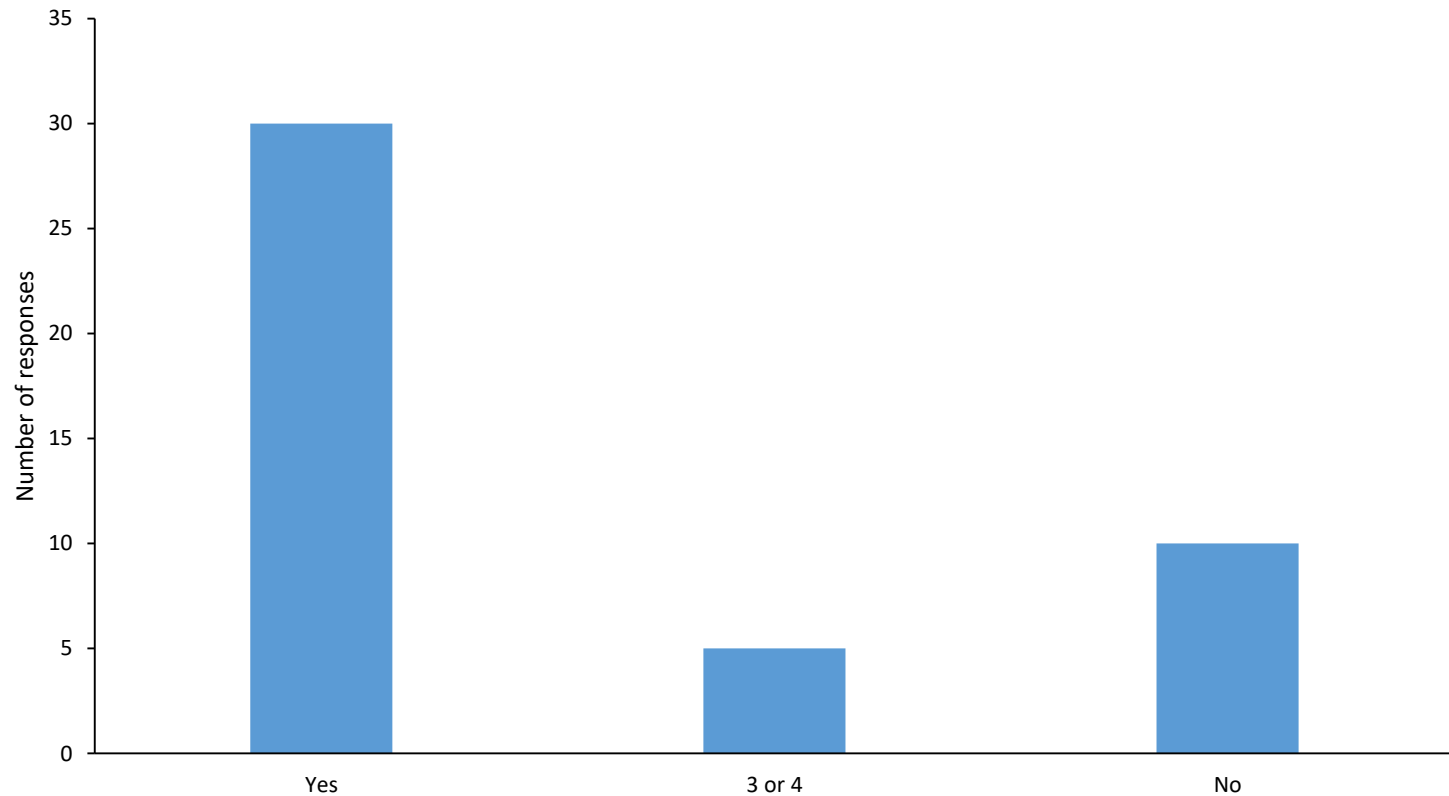


Local audit



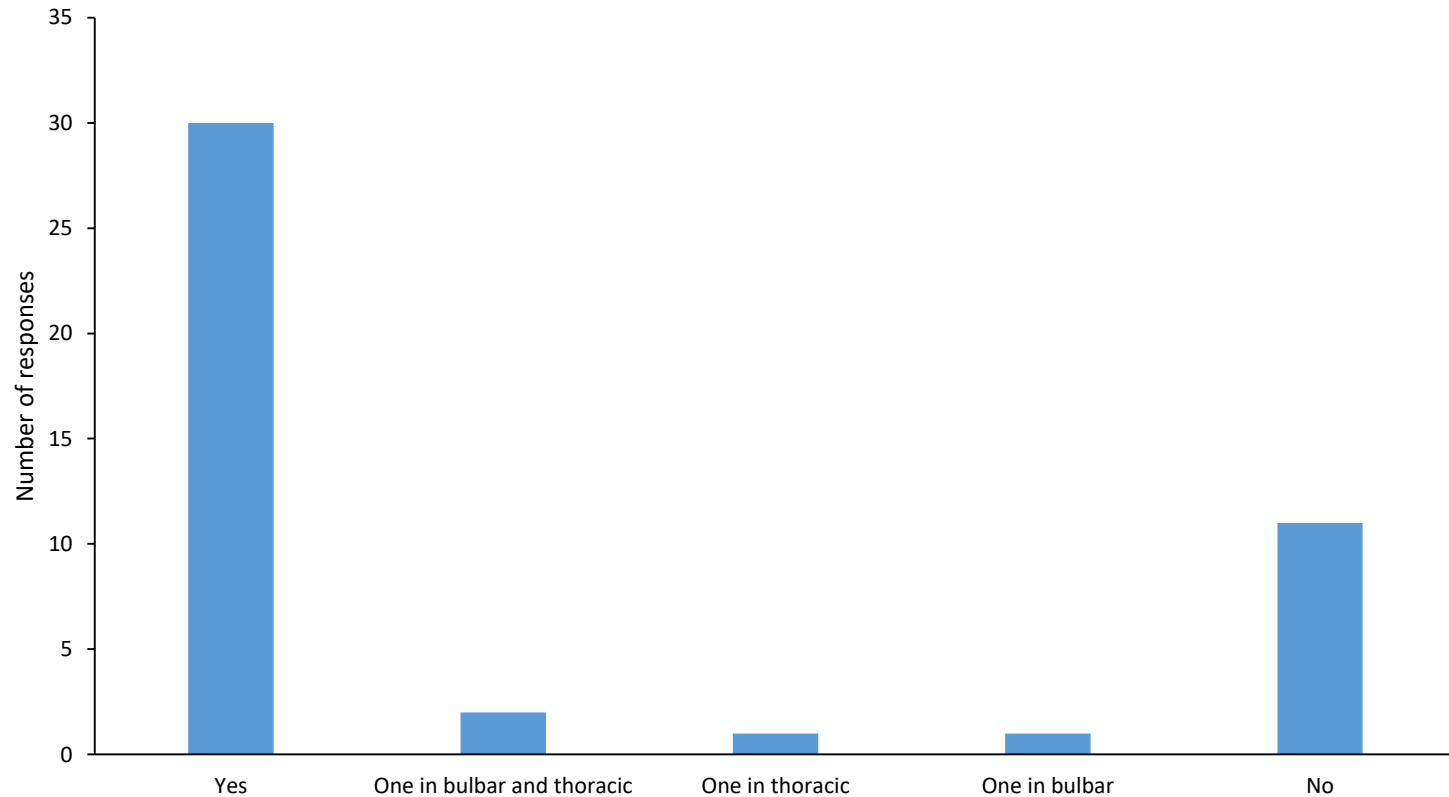
EMG study

- Four regions studied?



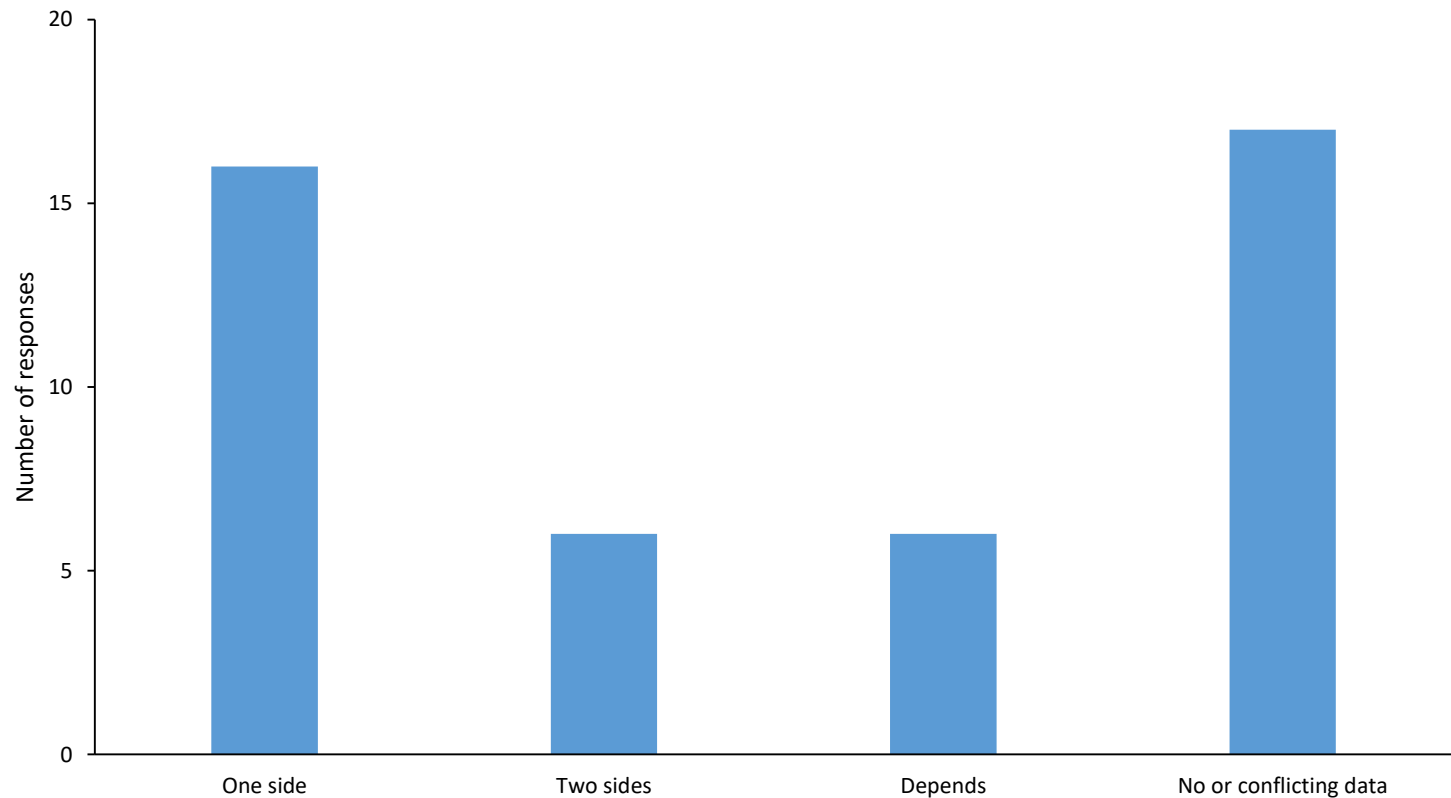
EMG study

- Two muscles per region?



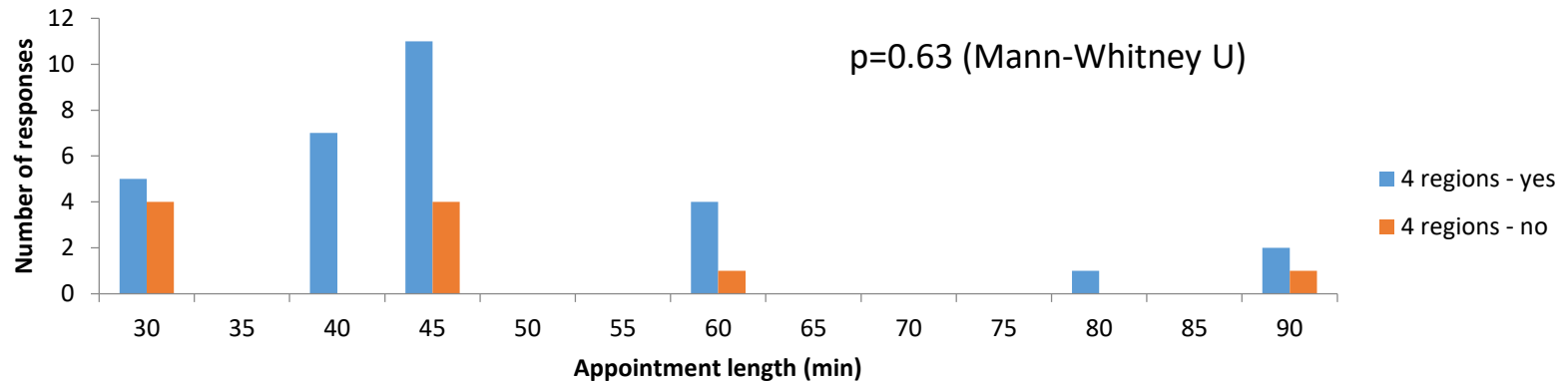
EMG study

- One or two sides?

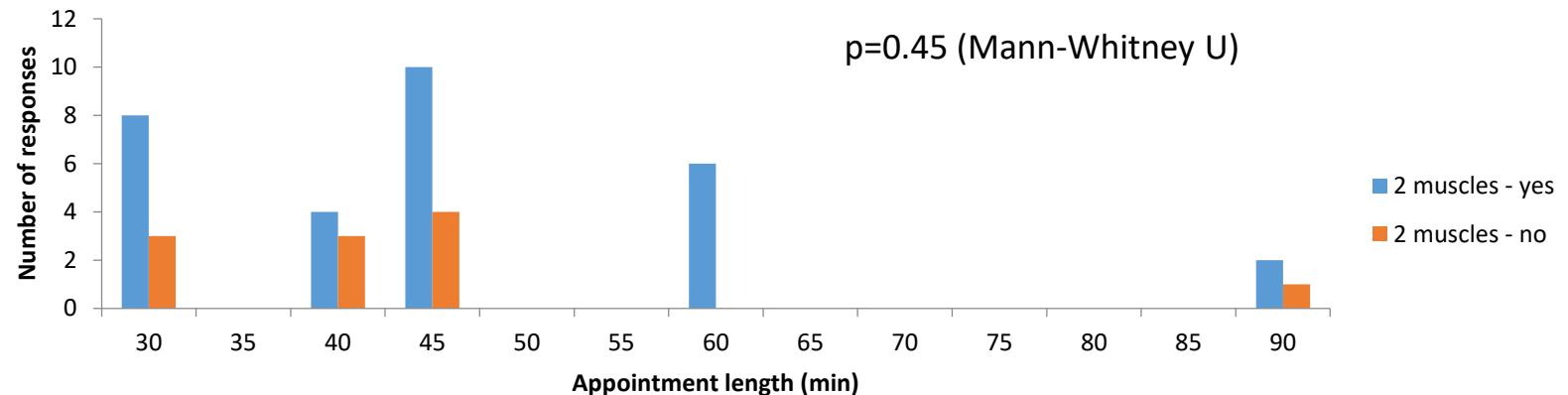


EMG study vs appointment length

- Four regions studied?

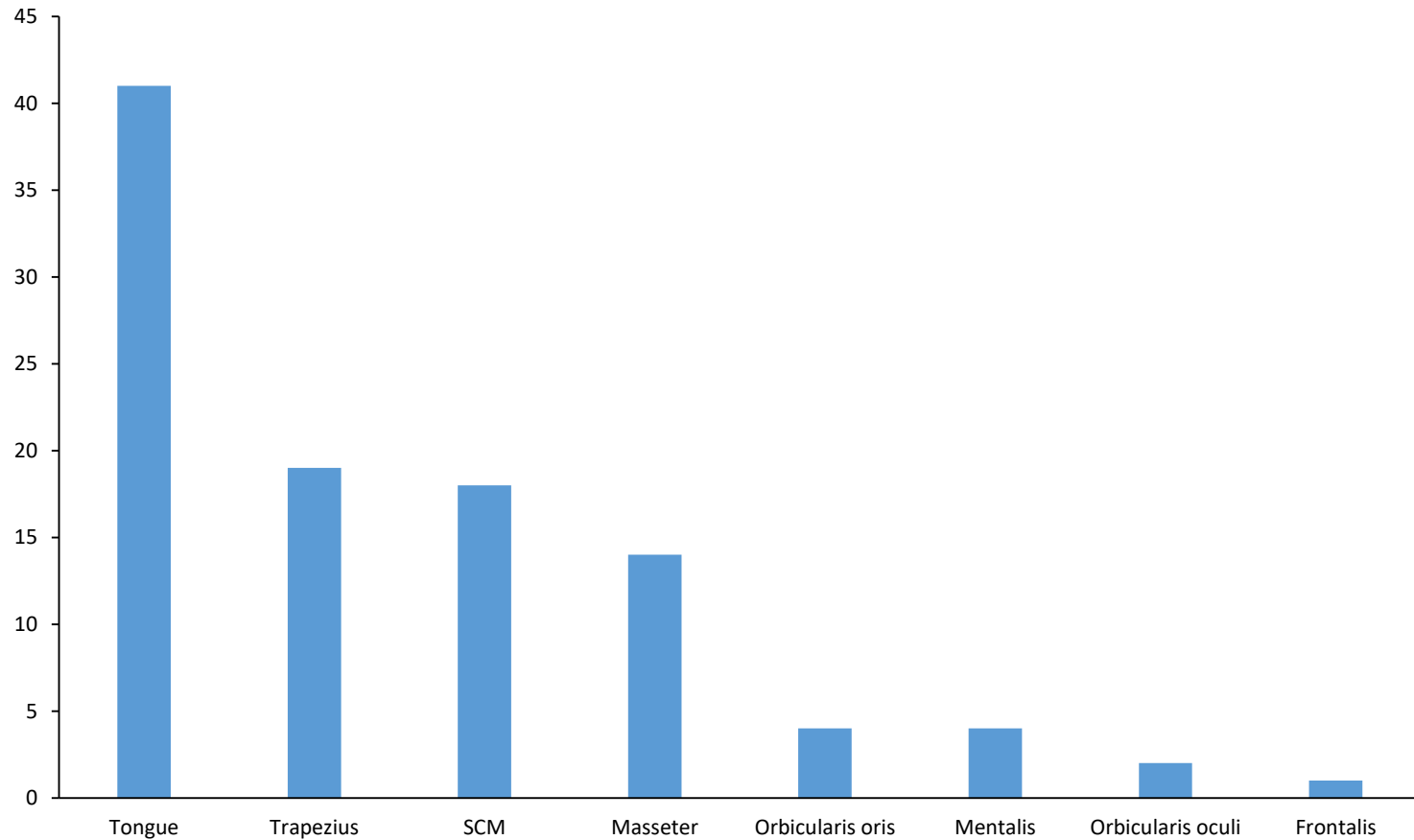


- Two muscles per region?



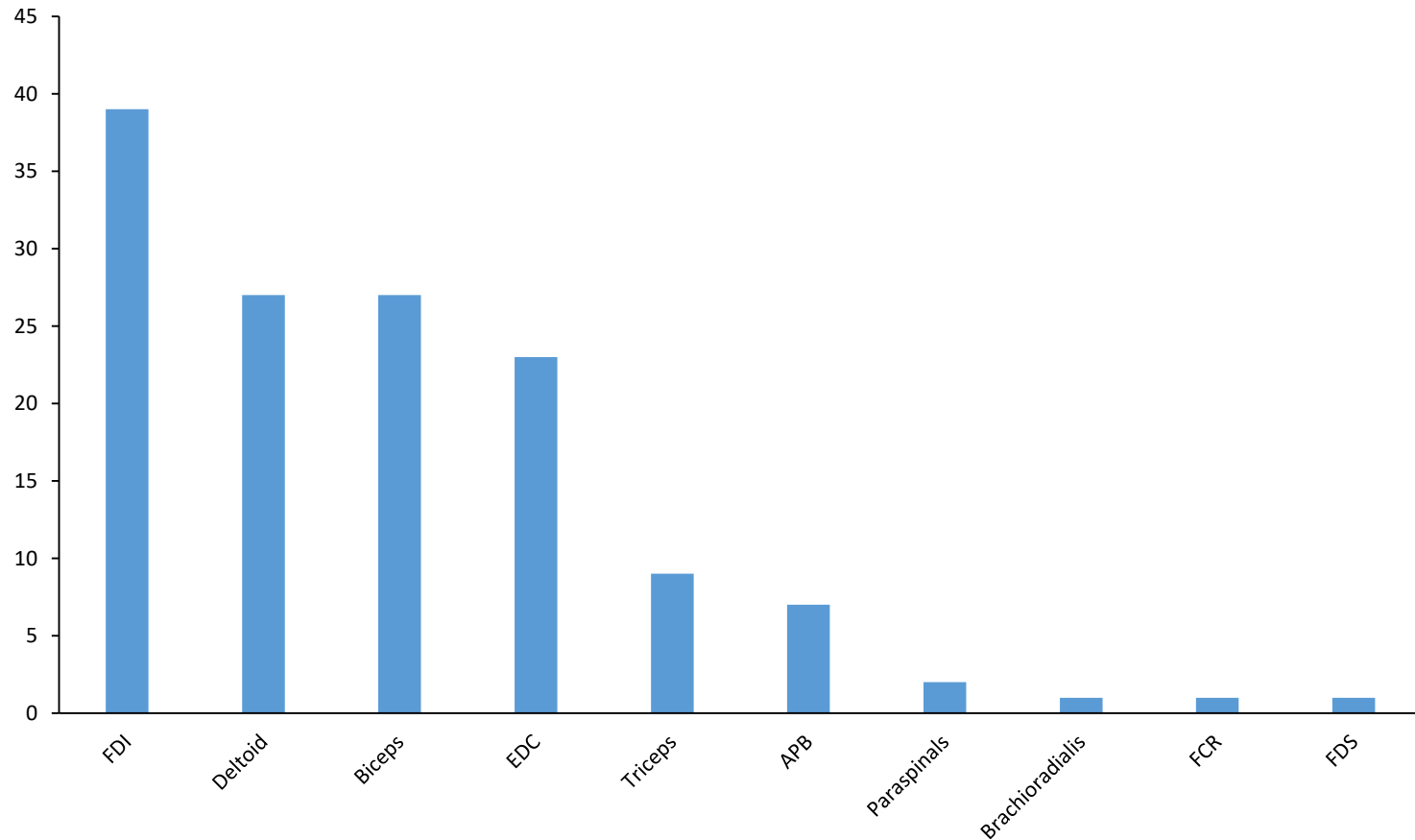
EMG study

- Muscles – bulbar



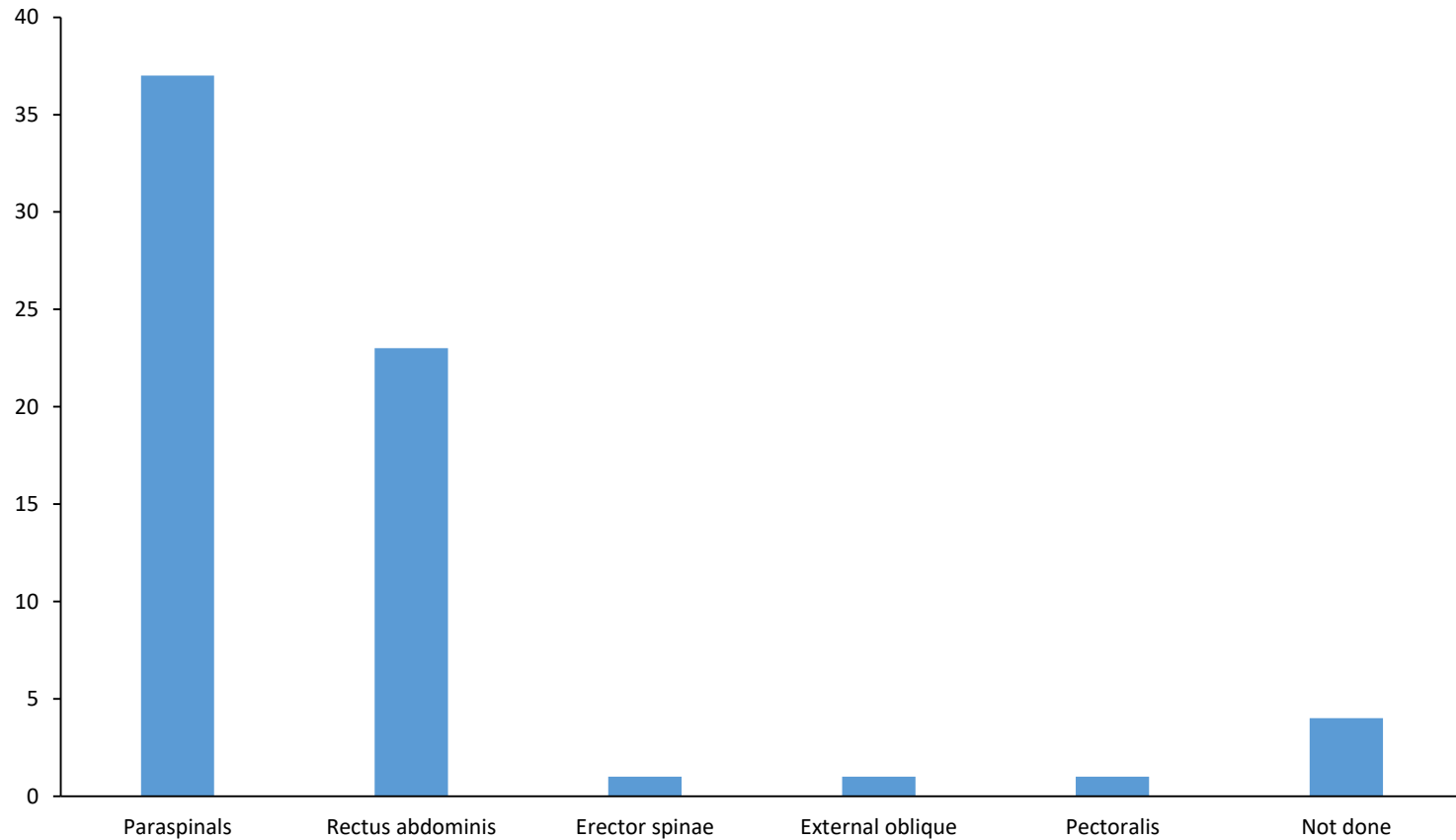
EMG study

- Muscles – cervical



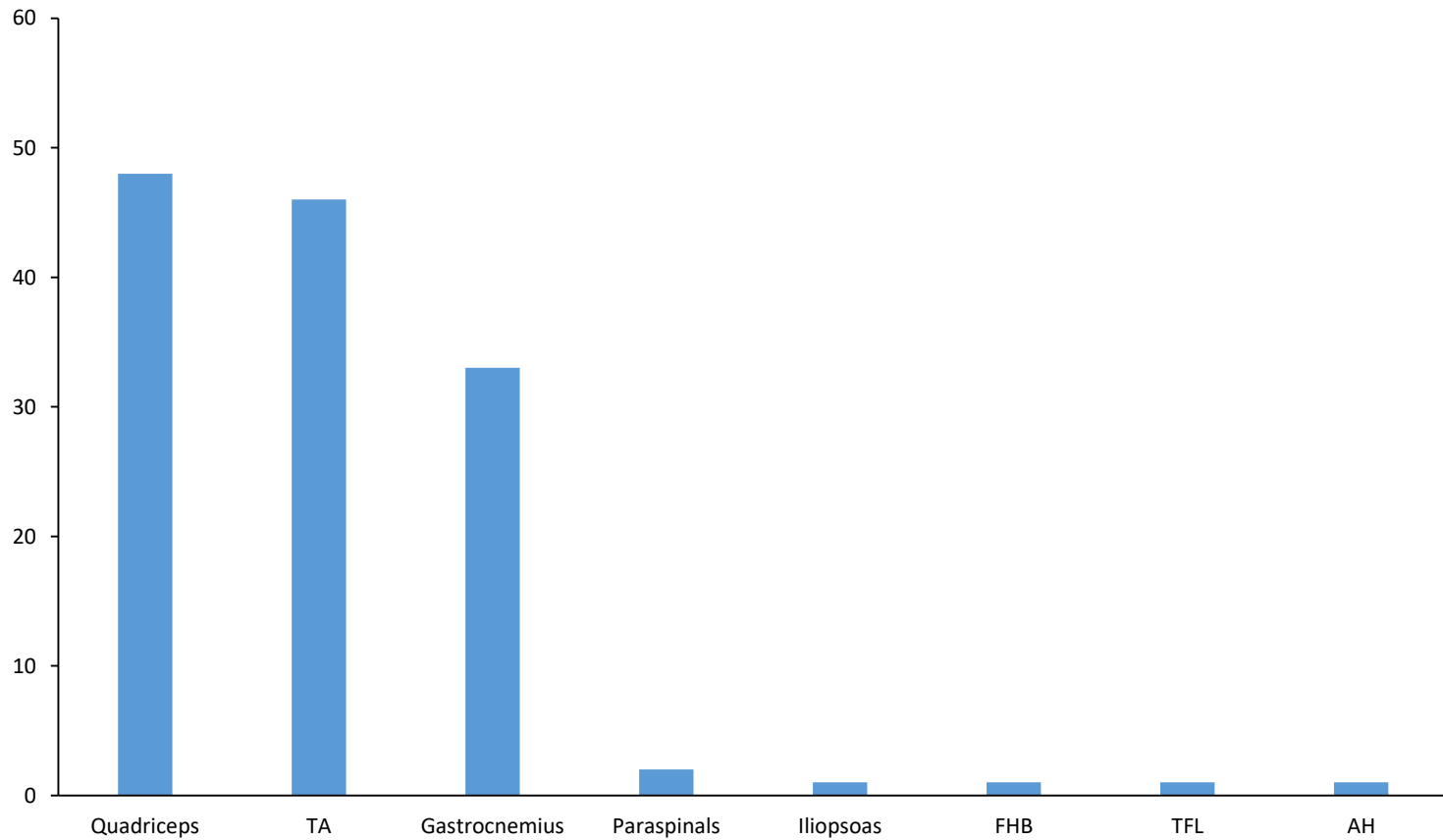
EMG study

- Muscles – thoracic



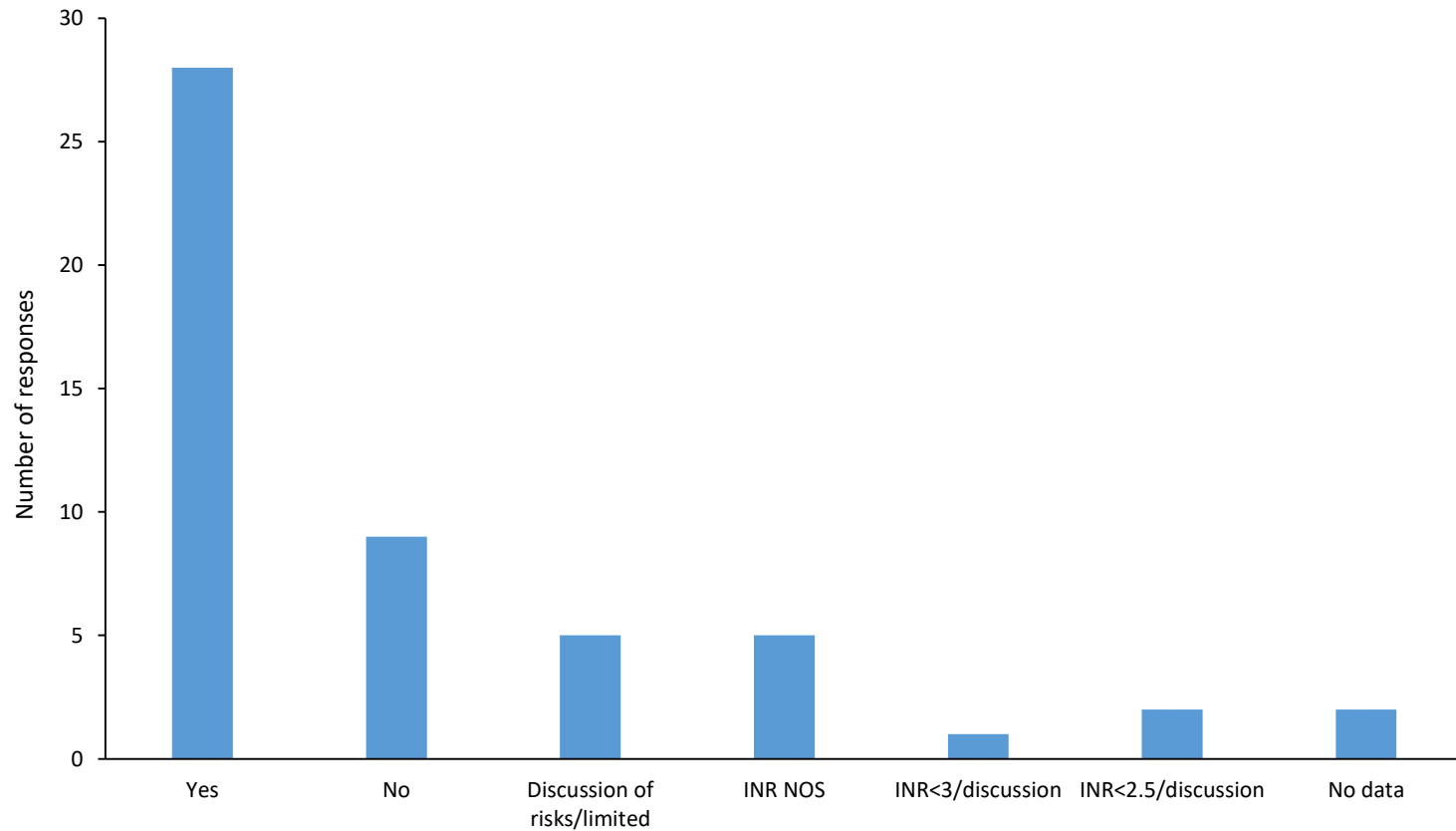
EMG study

- Muscles – lumbosacral



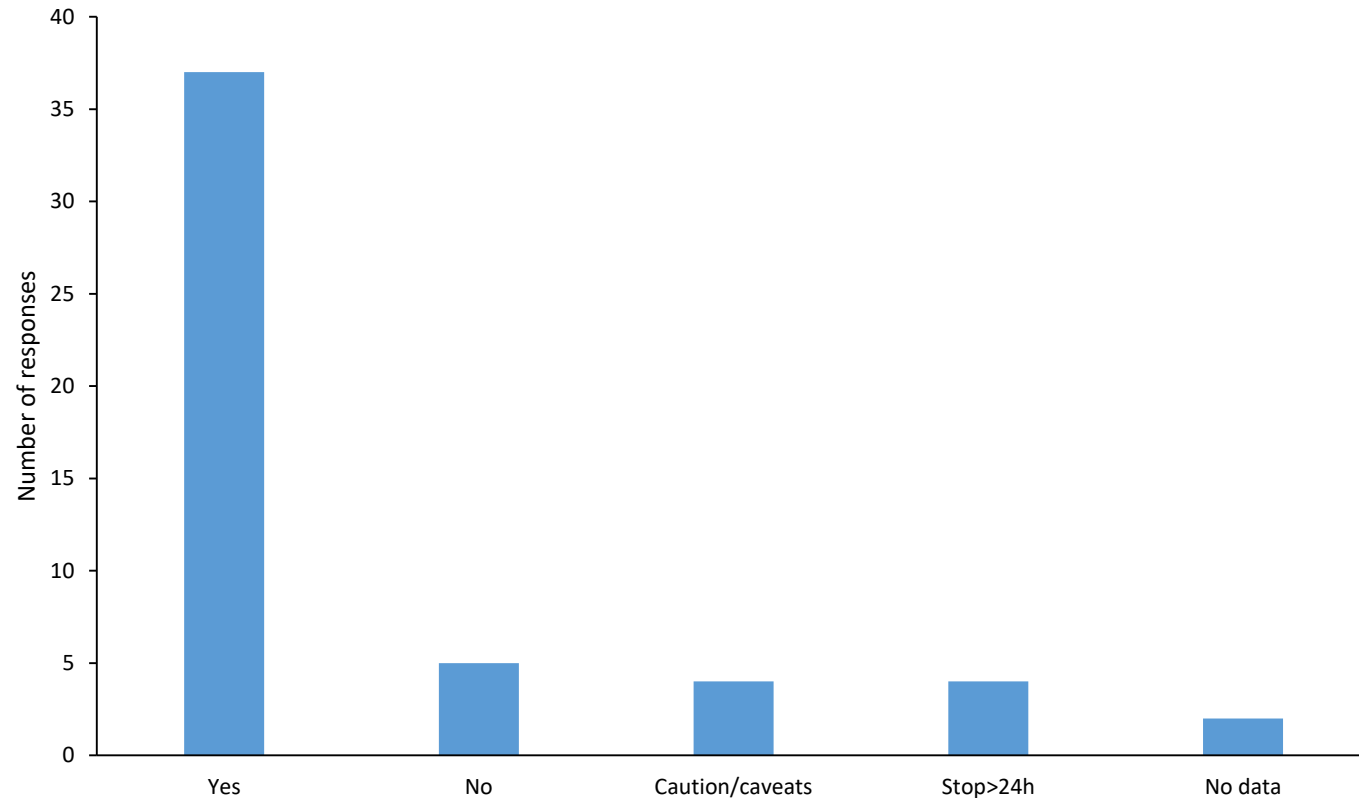
EMG on anticoagulation

- Warfarin



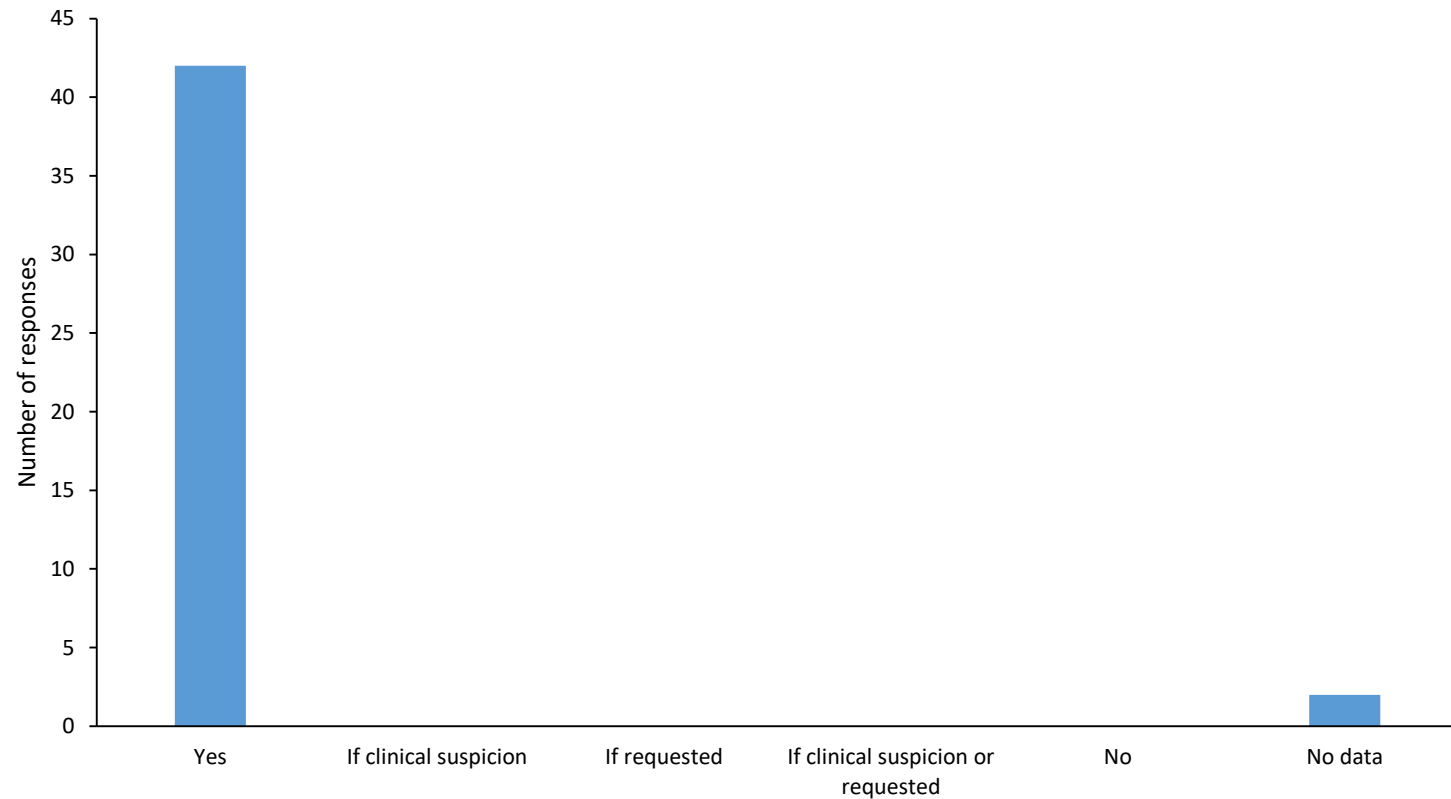
EMG on anticoagulation

- NOACs



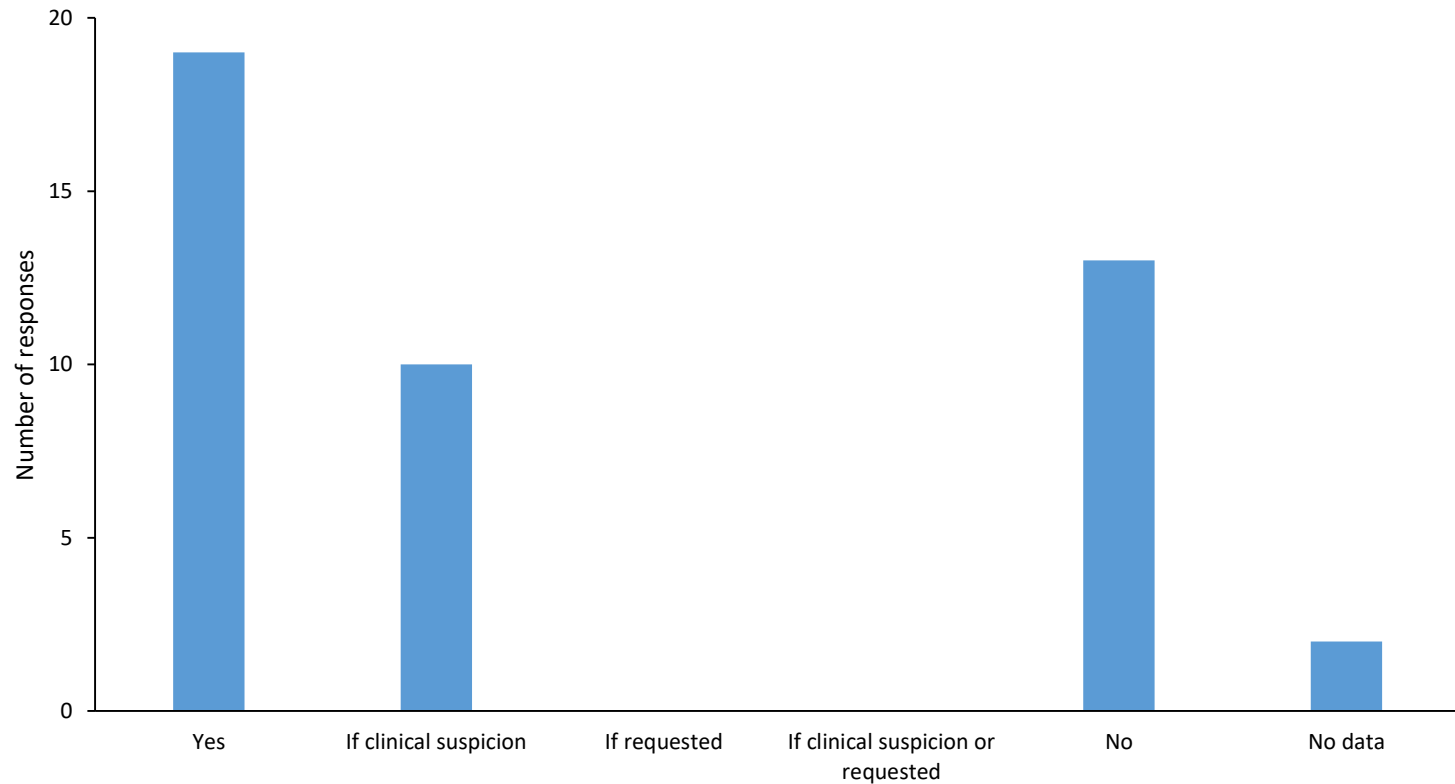
Other tests

- NCS



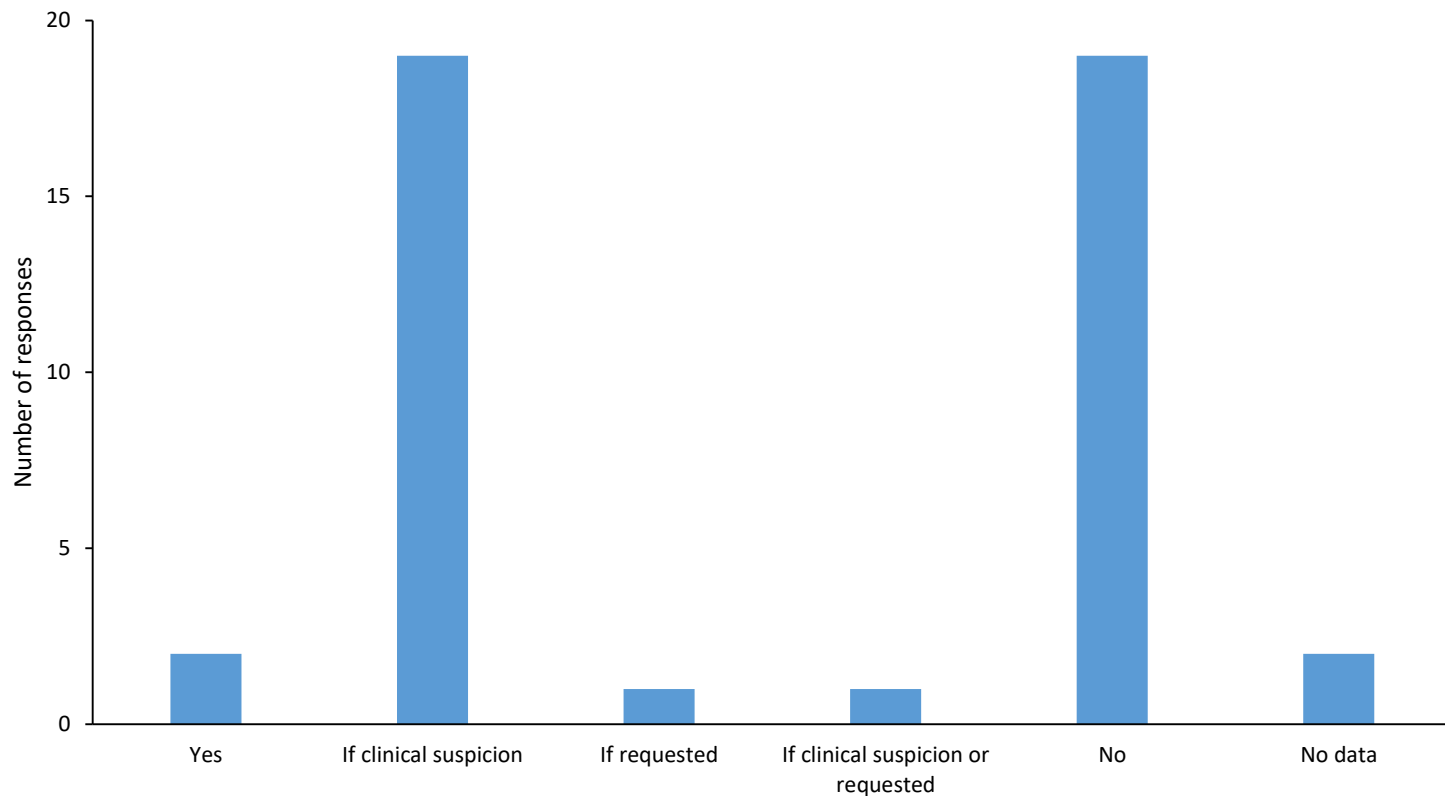
Other tests

- Segmental/proximal studies



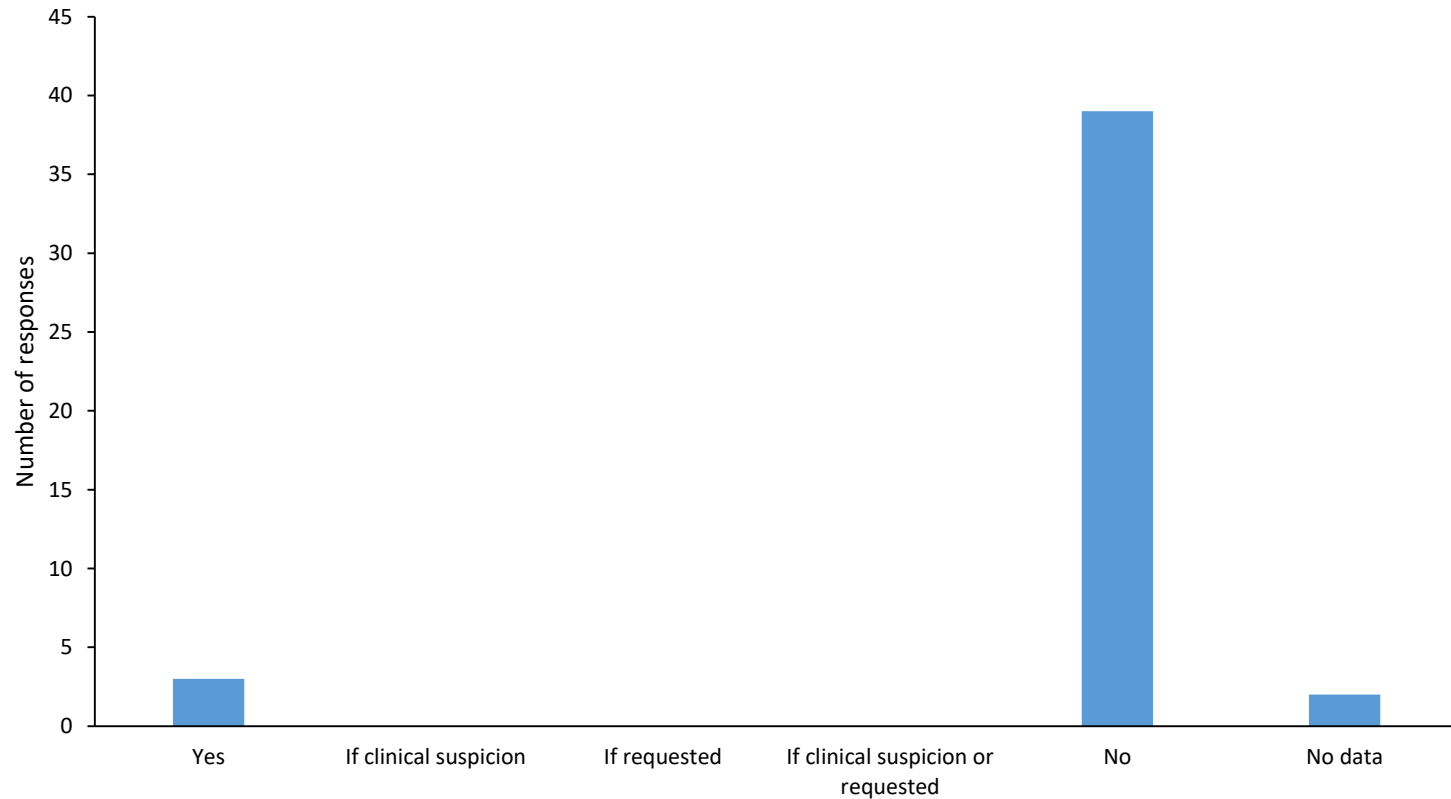
Other tests

- Repetitive nerve stimulation



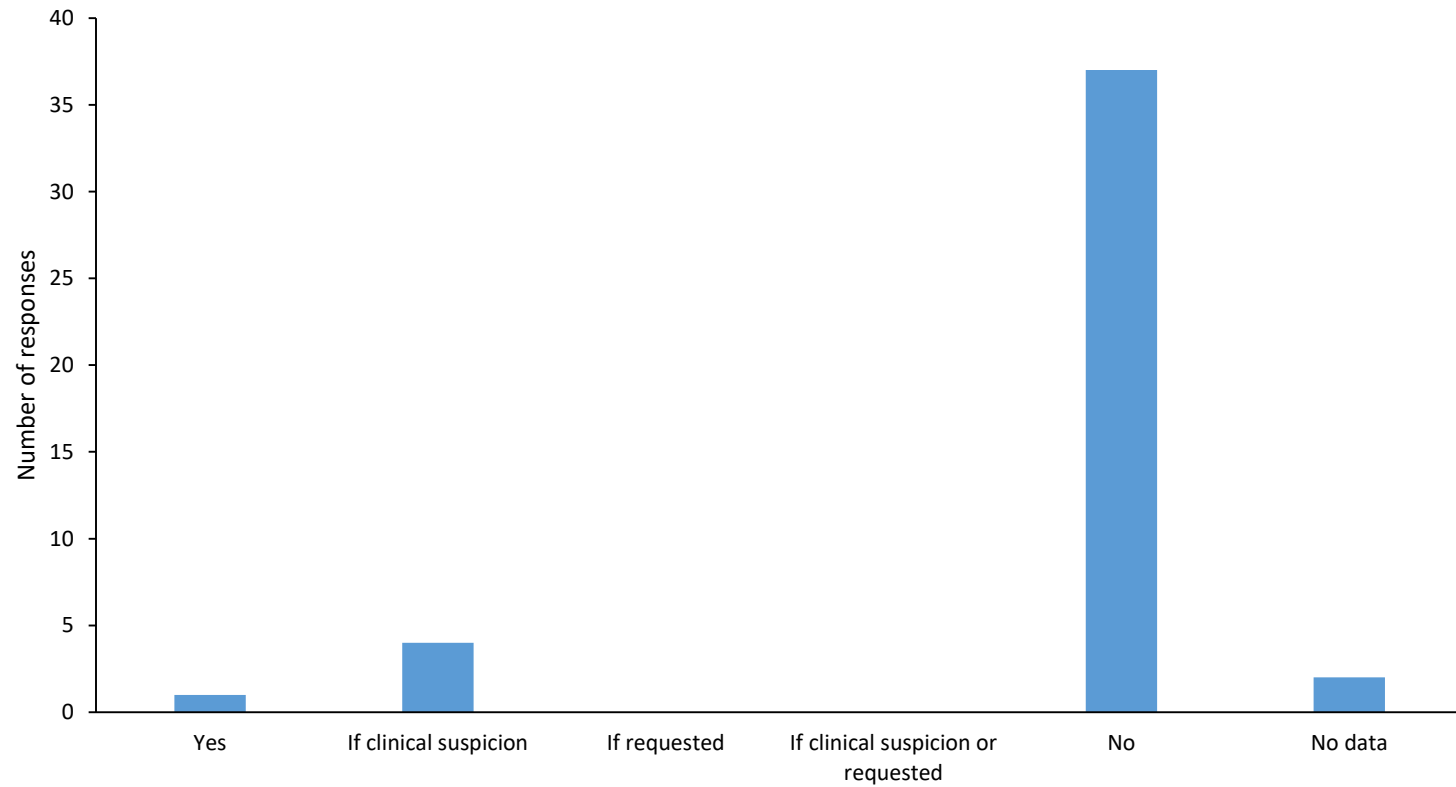
Other tests

- MUNE



Other tests

- TMS



Other tests

- Other
 - Turns/amplitude and MUP 1
 - USS for fascics/MMN 2

Form B

Individual Referrals

FORM B : Please complete for 5 consecutive patients referred with a provisional diagnosis of Pure Motor Syndrome, MND or Anterior Horn Cell disease. Please complete for 5 patients for each clinical neurophysiologist within the department.

Postcode of Centre (Please complete)	
Project code (Please leave blank- for office use only)	

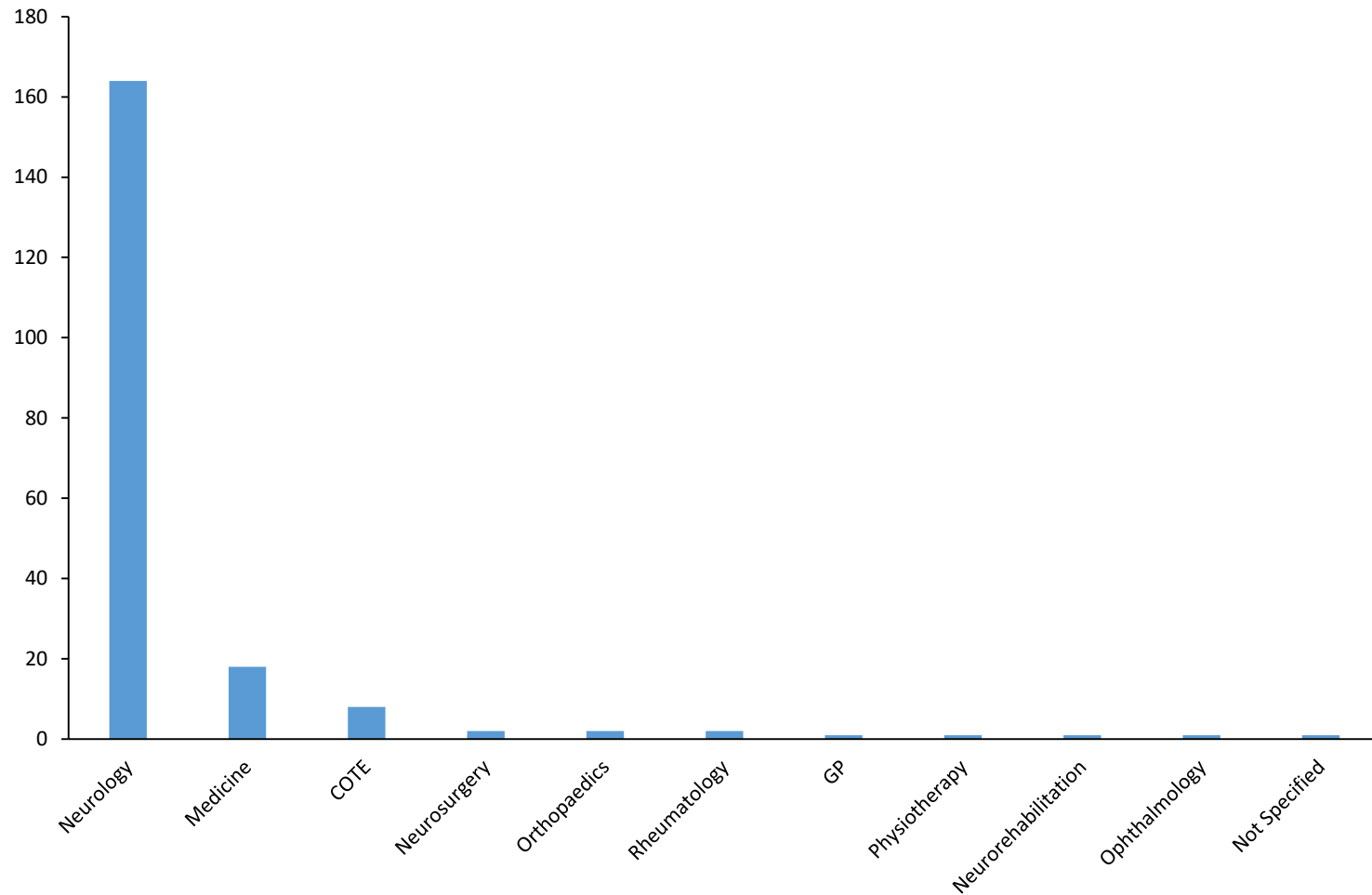
1. Referral diagnosis? (circle)	MND Other differential – please state	
2. Speciality of referring clinician? (circle)	Neurologist General Physician Rheumatologist Other – please state	
3. Time from referral to appointment? (days)		
4. Please state the number of muscles tested in each region. (If no muscles tested put 0)	Region Right Cervical Left Cervical Right Lumbosacral Left Lumbosacral Right Thoracic Left Thoracic Right Bulbar Left Bulbar	Number of muscles tested
5. Please state whether fibrillations/positive sharp waves/fasciculations were present (Y/N) (please circle)	Right Cervical Left Cervical Right Lumbosacral Left Lumbosacral Right Thoracic Left Thoracic Right Bulbar Left Bulbar	Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No

6. Please state whether chronic neurogenic denervation/reinnervation changes were present (Y/N) (please circle)	Right Cervical Left Cervical Right Lumbosacral Left Lumbosacral Right Thoracic Left Thoracic Right Bulbar Left Bulbar	Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No Yes / No
7. Studies performed on this patient apart from EMG	NCS Proximal motor studies (for assessment of MFMCNB) Repetitive Stimulation MUNE Transcranial Magnetic Stimulation Other – If yes, please state	Yes / No Yes / No Yes / No Yes / No Yes / No
8. Was patient anticoagulated?	Yes / No	
9. If Yes: did you perform needle EMG?	Yes / No	
10. Follow up/repeat studies recommended by Clinical Neurophysiologist? If yes, please give reason (s)	Yes / No	
Summary of findings		

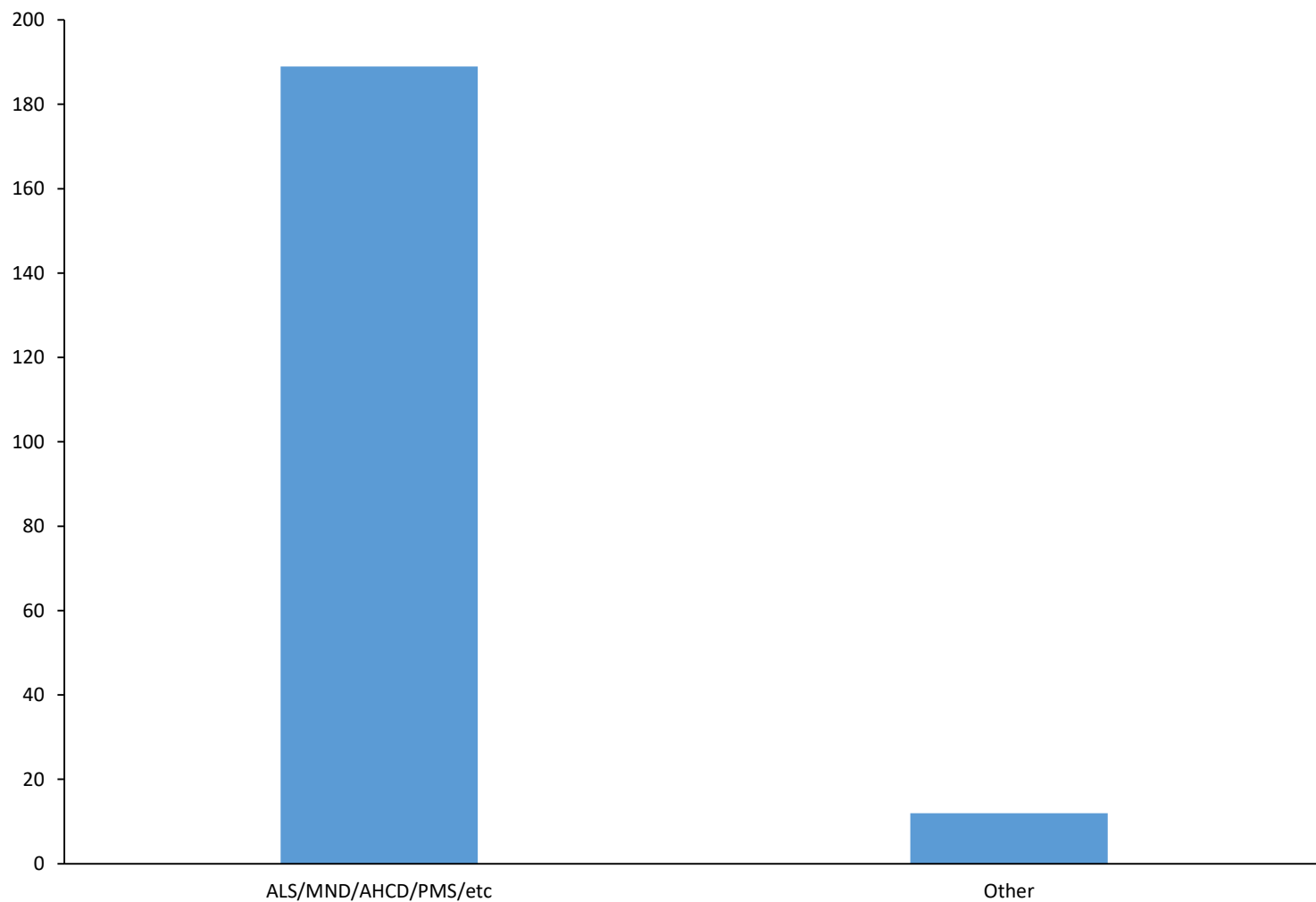
General

- Number of centres 31
- Time from referral (days)
 - Range 0-150
 - Mean 23.2
 - Median 20

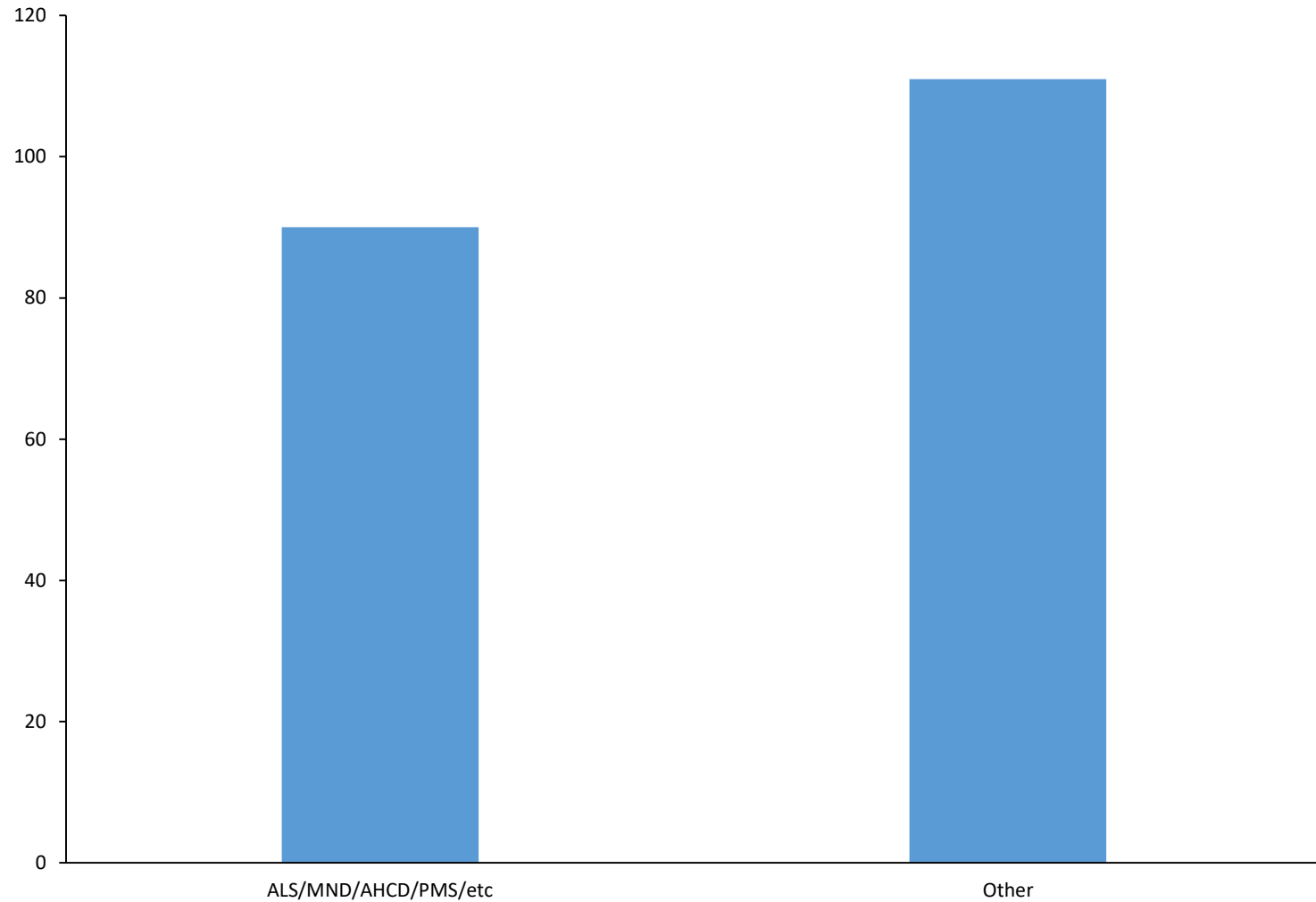
Referring speciality



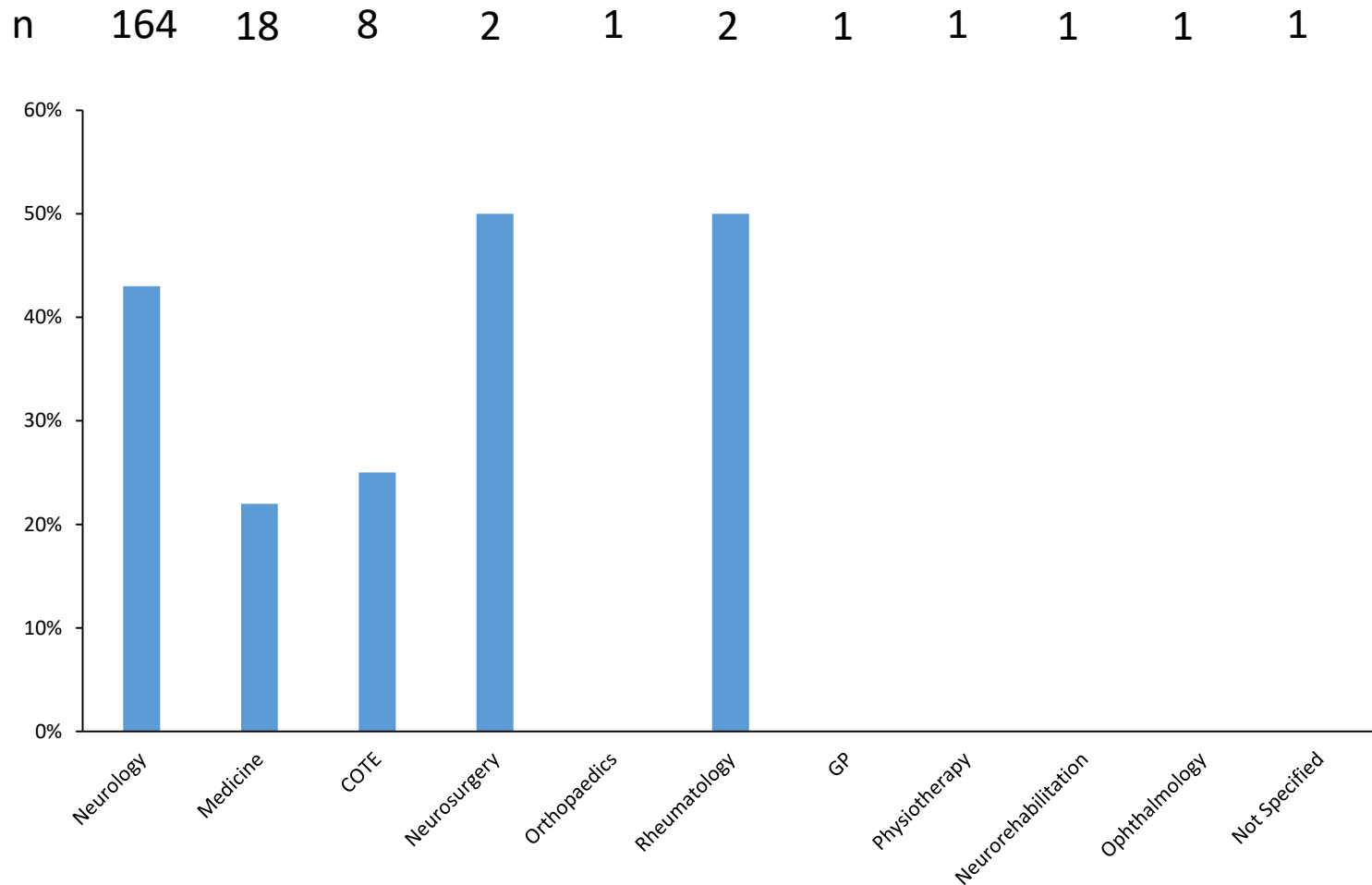
Referral indication



Diagnosis made



Accuracy of initial clinical diagnosis



Repeat EMG recommended

- 26%
- Example reasons
 - “Assess progression”
 - “If clinical deterioration”
 - For alternative test e.g. sfEMG

Comments

Variation in practice across UK

- Appointment length for EMG for ?MND
- EMG on anticoagulation

Appointment length

- What factors determine appointment length?
 - Number of muscles sampled? – *No*.
 - Local protocols? – *No*.
 - Published guidelines?
- Survey of UK practice?
 - Justification for appointment length for ?MND
- Do we need a national standard?

EMG on anticoagulation

- Review of evidence
 - E.g. Dodd et al.
- Survey of UK practice?
- Focus on NOACs?
- Rolling database?

REVIEW

Periprocedural antithrombotic management for lumbar puncture: Association of British Neurologists clinical guideline

Katherine Claire Dodd,^{1,2} Hedley C A Emsley,^{1,3} Michael J R Desborough,^{4,5} Suresh K Chhetri^{1,6}

► Additional material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136/practneurol-2017-001820>).

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ABSTRACT

Lumbar puncture (LP) is an important and frequently performed invasive procedure for the diagnosis and management of neurological conditions. There is little in the neurological literature on the topic of periprocedural management of antithrombotics in patients undergoing LP. Current practice is therefore largely extrapolated from guidelines produced by anaesthetic bodies on neuraxial anaesthesia, haematology groups advising on periprocedural management of antiplatelet agents and

questionnaire relating to these guidelines has been completed and is available as an inline supplementary appendix (Supplementary file 1).¹

CURRENT GUIDANCE

Current guidance on the periprocedural management of antithrombotics for spinal procedures has mainly come from anaesthetic groups regarding neuraxial anaesthesia.²⁻⁴ The most recent guidelines were published by the European Society

UK Practice for the Electrodiagnosis of MND

Results

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