Development of a multi-disciplinary team approach to genomic testing – We’re all in this together

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Outcomes of MDT meetings

MDT-A: Appropriate for study
Yes – 7 No – 18 More information – 2
Reasons for exclusion, options discussed with neurologist –
• Recent extensive genetic testing – too soon for useful retesting
• Unlikely to identify genetic cause – based on phenotype or history
• For referral to Clinical Genetics for broader syndromic work-up

MDT-B: Appropriate for Epilepsy targeted WES
Yes – 27 No – 2
Reasons for exclusion, options discussed with neurologist –
• Unlikely to identify genetic cause – based on phenotype or history
• For referral to Clinical Genetics for broader syndromic work-up

MDT-C: Do the identified variants match the phenotype
Discussion includes –
• Specificity of variants
• Options for further / future testing

From the MDT team

Question 1: What do you consider the key roles of the MDT? What is its purpose?
Key themes: Bringing together different subject matter experts, group decision making, relevance

Question 2: What do you find useful? What are the benefits?
Key themes: Education, collaboration, streamlining process

Key Quotes from MDT: “This produces a higher quality and more clinically relevant report for the patient.”
“… the MDT allows for a “community of practice” which seeks to harmonise viewpoints and educate.”
“Members of the MDT get to learn from each other” “I’m learning a lot!”

Conclusion and future plans

The MDT process:
• Supports education, communication and understanding in neurology, clinical genetics and pathology
• Lowers barriers to genomic testing
• Increases the accuracy and relevance of reported results
Plan to use this structure for genomic testing in other areas of neurology and other specialties.

Figures:

Figure 1: Patients seen at the MDT stages over 13 MDT meetings

Figure 2: Flow Chart of MDT Structure and Function

Legend:

MTD-A MTD-B MTD-C Total
27 29 3 59

Summary:

The multi-disciplinary team meeting

See Figure 1.
Patients are discussed at different stages of the testing process
MDT meets fortnightly, since January 2020 (with breaks due to Covid-19)
Managing neurologists are invited when their patient is discussed
Neurology / Pathology teams can attend for education

The right test for the right patient using the right approach”
“The difference in focus of each group allows for a more holistic review of results.”

Objectives and Methods

To describe the creation and process of the MDT meeting as a tool to encourage and improve implementation of genomic testing in refractory epilepsy
Demonstrate the structure and patient flow through testing
Describe outcomes of the MDT to date
Discuss the role and benefits of the MDT from the perspective of MDT members from qualitative questions

Background

• Our project goal is to gather evidence and support the integration of genomic testing into standard of care for refractory epilepsy in Queensland
• Barriers to the uptake of genomic testing in mainstream clinics include:
  • clinician support, education and involvement
  • complexity and cost of variant curation/analysis
  • interpretation and utilisation of results
• We created a multidisciplinary team (MDT) with pathology, treating clinicians and relevant specialists

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Multi-Disciplinary Team Meetings

Stage: MDT-A
Question: Is this patient appropriate to recruit?
Approval to recruit
Yes / need more information
Feedback to referring neurologist with outcomes and MDT’s suggestions – can return to MDT with more information
No /
possibly eligible
Meet eligibility criteria
Referral
Submit Patient checklist
(essential phenotype)
Neurologist

Stage: MDT-B
Question: Is targeted epilepsy WES appropriate for this patient? Which genes / gene panels?
Whole Exome Sequencing arranged
Approval to proceed
No / need more information

Stage: MDT-C
Question: Do the identified variants match patient’s clinical picture?
Clinical report finalised and returned to referring neurologist
Variant prioritisation sub-group
Question: Which genes do not fit phenotype? (neurologist/geneticist/scientist)

MDT member roles: Adult & paediatric neurologists, geneticists, genetic counsellors, genetic pathologists, scientists, variant curators, research team, administrative support.