Genetic Testing Rates of Individuals Diagnosed With FTD and Close Biological Relatives Assessed in the FTD Insights Survey

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Introduction

- Frontotemporal dementia (FTD) is a heterogeneous neurodegenerative disorder characterized by early age of onset and changes in behavior, language, and motor function resulting from progressive neurodegeneration of the frontal and temporal lobes[1,2]
- It is estimated that approximately 20% of patients have an autosomal dominant presentation of FTD[2,3]
- The majority of genetic FTD cases are caused by mutations in one of 3 genes: progranulin (*GRN*), chromosome 9 open reading frame 72 (*C9orf72*), or microtubule-associated protein tau (*MAPT*)[2]
- The Association for Frontotemporal Degeneration (AFTD) and the Frontotemporal Degeneration Disorders Registry collaborated on the development and execution of the FTD Insights Survey to better understand the lived experience of FTD[4]
- The FTD Insights Survey included questions on family history of FTD, the diagnostic journey, symptom-related experiences, genetic testing, and research readiness reported by the individual diagnosed with FTD, their biological relatives, or their caregivers[4]

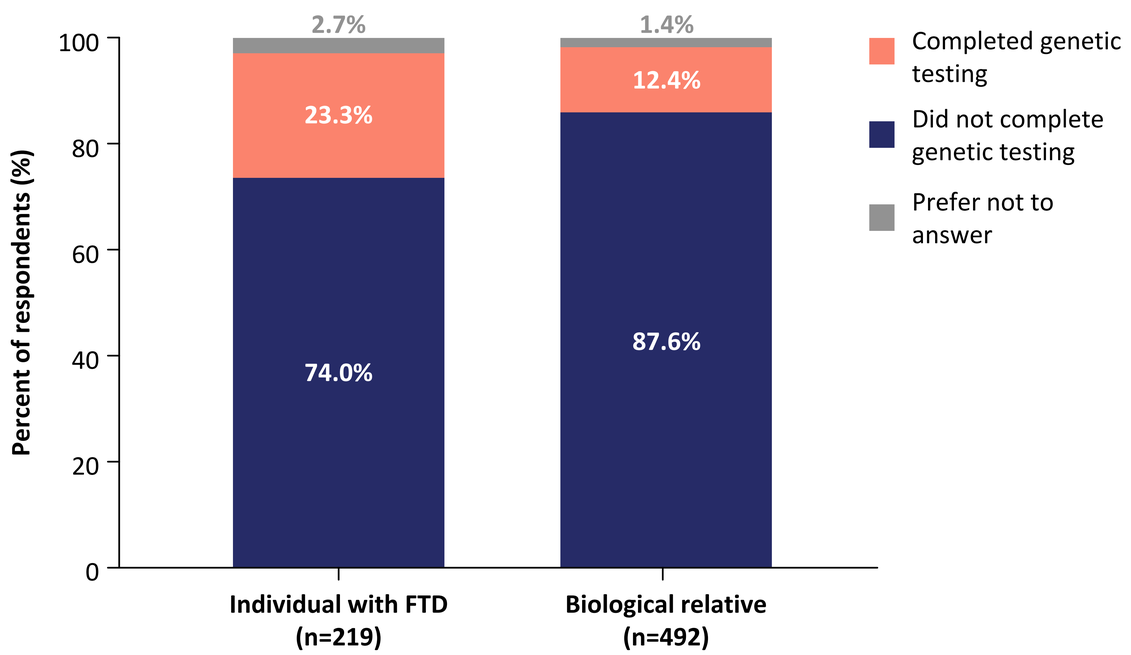
Methods

- Individuals currently diagnosed with any FTD spectrum disorder, their biological relatives, and their caregivers (current or past) were invited to participate in the FTD Insights Survey between October 2020 and March 2021[4]
- The FTD Insights Survey dataset contains approximately 1800 responses (US, UK, Canada) and is available to researchers
- To better understand rates of genetic testing, responses to the question, "*Have you been tested to see if you carry a specific gene for FTD?*" were analyzed for 1) patients with FTD who selected "*I am diagnosed with FTD*", and for 2) relatives who selected "*I have a close biological relative with FTD*" and did not select "*I am diagnosed with FTD*"

Results

- Among the 1796 total respondents who completed the survey,[3] 12.2% (n=219) reported being diagnosed with FTD and 27.4% (n=492) were biological relatives of individuals diagnosed with FTD
- Of 219 individuals diagnosed with FTD, 23.3% (n=51) reported that they completed genetic testing (**Figure 1**)
- Individuals diagnosed with FTD with ALS reported the highest rates of genetic testing (88.9%, n=8/9; **Table 1**)
- A greater percentage of patients who had completed genetic testing reported having at least 1 biological relative diagnosed with FTD compared to patients who did not complete genetic testing (44.2% vs 12.0%, respectively)
- Of 492 biological relatives, 12.4% (n=61) had completed genetic testing
- Relatives of individuals diagnosed with FTD with ALS reported the highest rates of genetic testing (25.6%, n=10/39)

Figure 1. Genetic Testing Rates for FTD



- Among relatives who responded Yes to "*Does your family carry a gene for FTD?*", 49.5% (n=47/95) had completed genetic testing

Results (cont.)

Table 1. Genetic Testing Rates Reported by Individuals With FTD and Their Biological Relatives

	Have you been tested to see if you carry a specific gene for FTD? n (%)		
	Yes	No	I prefer not to answer
Patient (n=219)	51 (23.3)	162 (74.0)	6 (2.7)
Biological relative (n=492)	61 (12.4)	424 (86.2)	7 (1.4)
Patient subgroups			
bvFTD (n=103)	29 (28.2)	73 (70.9)	1 (1.0)
PPA NOS (n=36)	4 (11.1)	28 (77.8)	4 (11.1)
PSP (n=25)	2 (8.0)	23 (92.0)	0
CBD (n=18)	2 (11.1)	16 (88.9)	0
FTD with ALS (n=9)	8 (88.9)	1 (11.1)	0
svPPA (n=7)	1 (14.3)	6 (85.7)	0
lvPPA (n=6)	0	5 (83.3)	1 (16.7)
I'm not sure (n=15)	5 (33.3)	10 (66.7)	0
Biological relative subgroups			
bvFTD (n=288)	40 (13.9)	243 (84.4)	5 (1.7)
PPA NOS (n=77)	6 (7.8)	70 (90.9)	1 (1.3)
PSP (n=32)	0	32 (100.0)	0
CBD (n=14)	0	14 (100.0)	0
FTD with ALS (n=39)	10 (25.6)	28 (71.8)	1 (2.6)
svPPA (n=11)	0	11 (100.0)	0
lvPPA (n=4)	1 (25.0)	3 (75.0)	0
I'm not sure (n=27)	4 (14.8)	23 (85.2)	0

Conclusions

- In this analysis from the FTD Insights Survey, less than a quarter of patients diagnosed with FTD had completed genetic testing despite FTD epidemiology showing that genetic forms comprise a significant percentage of all FTD cases
- The highest rates of genetic testing were reported for individuals diagnosed with FTD with ALS
- Individuals who completed genetic testing were 3.7 times more likely (vs those who did not complete genetic testing) to have a known family history of FTD
- Low rates of genetic testing may exacerbate the challenges faced by families impacted by FTD, such as assessing familial risk of developing FTD and determining eligibility for investigational drugs in development for genetic forms of FTD
- Study limitations included that all survey responses were self-reported, and that it was unclear whether respondents had been offered genetic testing and declined, or had never been offered genetic testing
- Additional research is needed to better understand the accessibility of genetic testing and counseling
- These findings highlight the need to raise awareness of genetic FTD with healthcare providers, patients, and biological relatives
- FTD Insights Survey data are available for researchers; for more information, contact director@FTDregistry.org or visit https://ftdregistry.org/for-researchers

References

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Abbreviations

AFTD, Association for Frontotemporal Degeneration; ALS, amyotrophic lateral sclerosis; bvFTD, behavioral variant FTD; *C9orf72*, chromosome 9 open reading frame 72 gene; CBD, corticobasal degeneration; FTD, frontotemporal dementia; *GRN*, progranulin gene; lvPPA, logopenic variant primary progressive aphasia; *MAPT*, microtubule-associated protein tau gene; PPA NOS, PPA not otherwise specified; PSP, progressive supranuclear palsy; svPPA, semantic variant PPA.

Disclosures

DMC, SM, and TWC are current or former employees of Alector, Inc., and may have an equity interest in Alector, Inc. CFM, PAD, and RR are employees of the Frontotemporal Degeneration Disorders Registry. PAD is also an employee of AFTD.

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