Treatment Landscape for Desmoid Tumors

Desmoid Tumor Research Foundation Natural History Study

ABSTRACT NO. 149P

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BACKGROUND

- Desmoid tumors (aggressive fibromatosis) are rare, locally aggressive, infiltrative, potentially morbid soft-tissue tumors that rarely metastasize but are challenging to diagnose and treat[1]
- Key treatment goals include decrease in tumor size and cellularity and improvements in pain, symptom burden, functioning, and overall quality of life[2,3]
- Various disease management options are available for patients with desmoid tumors, including surgery, systemic therapies (eg, gamma secretase inhibitors, nonsteroidal anti-inflammatory drugs [NSAIDs], conventional cytotoxic chemotherapy, and tyrosine kinase inhibitors), local control treatments (eg, cryoablation and high-intensity focused ultrasound), symptom management, and active surveillance[1,2]
- Individual experiences of desmoid tumor prognosis and management are vast and varied[1,2]

OBJECTIVE

- To describe the real-world treatment landscape for patients with desmoid tumors after diagnosis

METHODS

- Data from the global, survey-based Desmoid Tumor Research Foundation (DTRF) Natural History Study were collected from Sept 2017 to Aug 2023[4]
- The fifteen surveys included in the study were designed to describe the symptoms through different clinical stages of rare disorders (developed from templates produced by the National Organization for Rare Disorders [NORD]), and specifically desmoid tumors (designed by the DTRF Natural History Study investigators)[4,5]
- This analysis focused on details about desmoid tumor treatments reported by adult patients or caregivers of pediatric patients who speak and read English
- Where applicable, proportions were compared between groups using Pearson's chi-square test or Fisher's exact test
- The N values vary for analyses due to differing data completeness across survey questions

RESULTS

PARTICIPANT AND DESMOID TUMOR CHARACTERISTICS

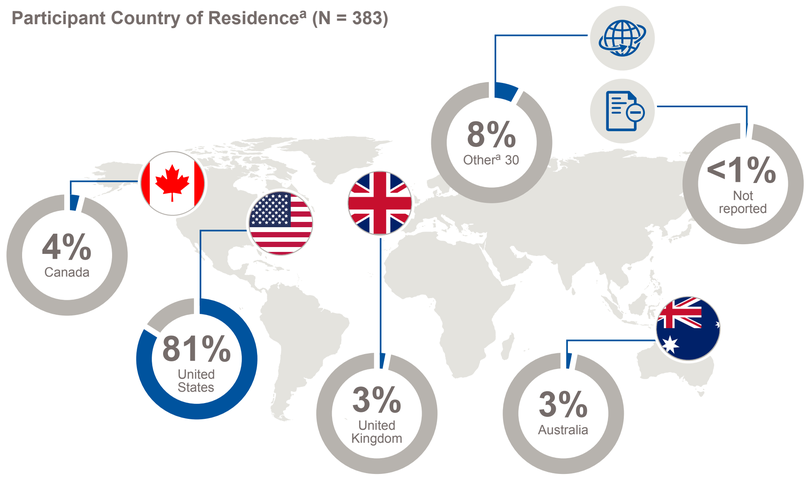
- In total, 383 participants completed the treatment survey

Participant Demographics (N = 383)

Age range 2–81 years **Median** 39 years (IQR, 31–48)

IQR, interquartile range.

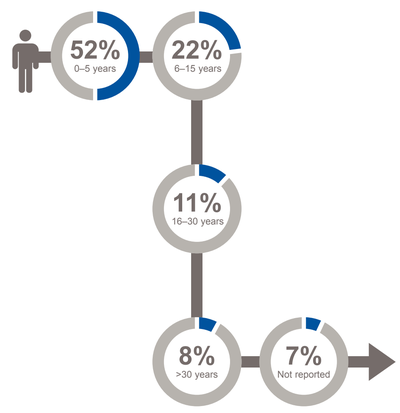
Participant Country of Residence[a] (N = 383)



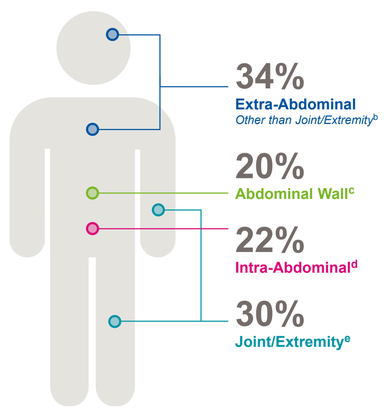
Note that the percentages in this figure have been rounded and therefore, may not total 100%.

[a]23 additional countries with <10 participants include Argentina (1), Belgium (1), Brazil (3), the Cayman Islands (1), Denmark (1), Estonia (1), France (2), Germany (1), Hong Kong (1), India (1), Ireland (4), Italy (2), Japan (1), Jersey (1), Jordan (1), the Netherlands (1), Norway (1), the Philippines (1), Poland (1), Romania (1), Spain (1), Sweden (1), and the United Arab Emirates (1).

Desmoid Tumor Duration (N = 383)



Desmoid Tumor Location[a] (N = 383)



[a]Some participants reported more than one tumor location; therefore, percentages do not total 100%. [b]Refers to the head/neck, chest wall, and other locations. [c]Refers to a superficial location on the stomach muscle. [d]Refers to locations deep in the abdomen and involving the bowels, kidney, and/or pelvis. [e]Refers to the hips, knees, shoulders, arms, hands, feet, and legs

SYSTEMIC TREATMENTS AND SYMPTOM MANAGEMENT

- 76% (281/369) of participants received systemic therapy after desmoid tumor diagnosis, including NSAIDs (40%), tyrosine kinase inhibitors (32%), and chemotherapeutics (31%) **(Table 1)**
- Use of medications for symptom management was similar whether participants had a current tumor or not (p = 0.929) **(Table 2)**

Table 1. Systemic Treatments (Any Line; N = 281)

	N (%)[a]
Chemotherapeutics	**87 (31%)**
Methotrexate	32 (37%)
Vinblastine	26 (30%)
Doxorubicin (or doxorubicin)	25 (29%)
Liposomal doxorubicin (or doxil)	25 (29%)
Dacarbazine	7 (8%)
Vinorelbine	6 (7%)
Hydroxyurea	2 (2%)
Ifosfamide	2 (2%)
NSAIDs (inc. sulindac and celecoxib)	**112 (40%)**
NSAIDs (not otherwise specified)	51 (46%)
Sulindac	46 (41%)
Celecoxib	23 (21%)
Tyrosine kinase inhibitors	**91 (32%)**
Sorafenib	64 (70%)
Imatinib	26 (29%)
Pazopanib	9 (10%)
Sunitinib	1 (1%)
Hormone antagonists[b]	**47 (17%)**
Antihormonal agent (eg, tamoxifen)	41 (87%)
Toremifene	4 (9%)
Anastrozole	2 (4%)
Gamma secretase inhibitor	**3 (1%)**
Other (eg, rituximab)	**57 (20%)**

[a]Percentages in shaded rows are based on a total N of 281. Percentages in non-shaded rows are based on subgroup n values indicated in the preceding shaded row; n values vary. [b]Hormone antagonists are no longer recommended by treatment guidelines.[6]

Table 2. Medications for Symptom Management

Medications	Overall (N = 322)	Current Tumor (n = 225)	No Current Tumor (n = 97)
	N (%)	n (%)	n (%)
NSAIDs[a]	151 (47%)	103 (46%)	48 (49%)
Antidepressants[b]	60 (19%)	41 (18%)	19 (20%)
Anticonvulsants[c]	36 (11%)	26 (12%)	10 (10%)
Muscle relaxants[d]	39 (12%)	28 (12%)	11 (11%)
Opioids[e]	61 (19%)	45 (20%)	16 (16%)
Other	33 (10%)	26 (12%)	7 (7%)
None	104 (32%)	69 (31%)	35 (36%)

[a]acetyl salicylic acid, celecoxib, ibuprofen, indomethacin, naproxen, oxaprozin, and nabumetone. [b]sertraline, fluoxetine, citalopram, escitalopram, paroxetine, fluvoxamine, and trazodone. [c]carbamazepine, diazepam, ethosuximide, and gabapentin. [d]baclofen, chlorzoxazone, carisoprodol, cyclobenzaprine, dantrolene, diazepam, metaxalone, methocarbamol, and tizanidine. [e]codeine, fentanyl, hydrocodone, meperidine, and methadone.

TREATMENT SEQUENCING

- In 126 participants (33%; 126/383) who received multiple treatments, surgery was the most prevalent first-line treatment, and chemotherapy was the most prevalent second- and third-line treatment **(Figure 1)**

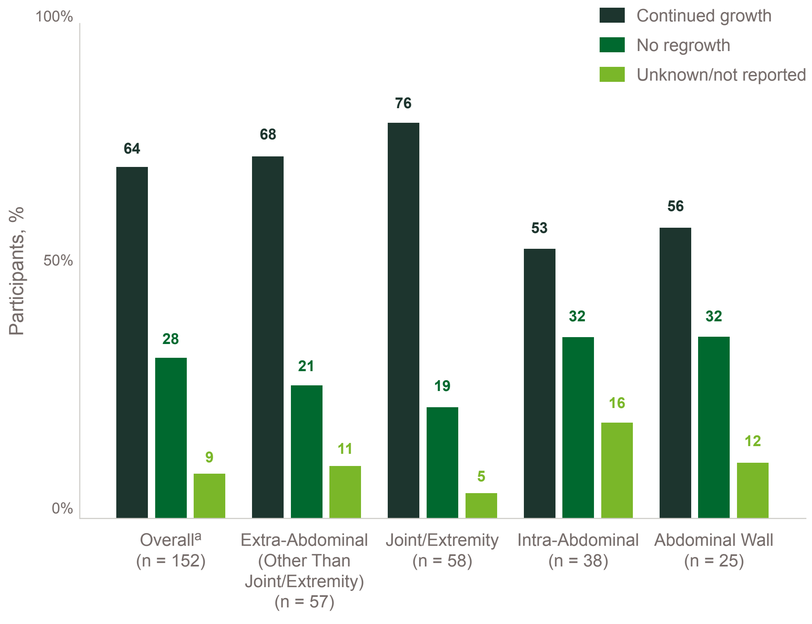
Figure 1. Treatment Sequencing (n = 126)

	Surgery	Chemo-therapeutics	Radiation	Cryoablation	High-Intensity Focused Ultrasound	Not Reported
1st Line	59%	24%	10%	<1%	4%	2%
2nd Line	27%	43%	14%	4%	<1%	5%
3rd Line	10%	18%	12%	5%	2%	0%

SURGICAL OUTCOMES

- Of the 163 participants (43%; 163/383) who underwent surgery after diagnosis, 63% reported subsequent continued tumor growth/recurrence at a rate that was similar among male (57%; 28/49) and female (68%; 75/110) participants
  - 4 (2%) participants did not respond or identified as transsexual
- 7% (12/163) of participants who underwent surgery required amputation, and most of this group (83%; 10/12) experienced desmoid tumor recurrence after amputation; the age of symptom onset for all participants who reported amputation was ≤30 years
- Trends in surgical outcomes were similar across tumor locations (p = 0.209) **(Figure 2)**

Figure 2. Surgical Outcomes by Tumor Location

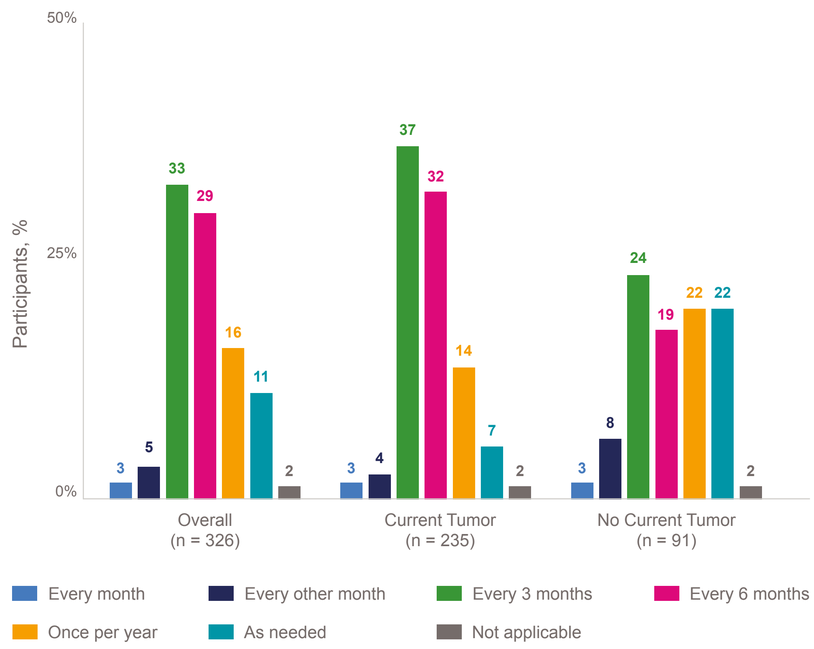


[a]Some participants reported more than one tumor location; therefore, percentages exceed 100%.

TUMOR BURDEN

- 70% (240/341) of participants had a current tumor and of 202 participants who received prior treatment, 46% (92) reported continued tumor growth
- A greater proportion of participants with a current desmoid tumor underwent monitoring at least every 6 months (77%; 181/235) versus those without a current tumor (54%; 49/91) **(Figure 3)**
  - Monitoring included regular clinical health visits and radiologic assessment (eg, CT, MRI)
- No differences were observed in monitoring frequency according to familial adenomatous polyposis (FAP) or *CTNNB1* genetic mutations (p = 0.694; data not shown)

Figure 3. Desmoid Tumor Monitoring Frequency by Current Tumor Status



CONCLUSIONS

- Surgery was the most prevalent first-line therapy after diagnosis for participants with multiple treatments, with a high rate of desmoid tumor recurrence after surgery regardless of tumor location
- Utilization and sequencing of systemic therapies was variable, reflecting the absence of a standard of care
- Participants experienced substantial tumor recurrence and growth after treatment(s)
- Substantial supportive care was reported, suggesting a high unmet medical need in desmoid tumor management despite the variety of treatment options
- With FDA approval of nirogacestat for the treatment of patients with desmoid tumors, clinical practice should mirror guideline updates from the National Comprehensive Cancer Network in Oncology (NCCN)

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