and outcomes. National ADI ranking was assigned to each patient's geocoded address.

**Results:** This analysis included 574 adult patients with TGCT in the US (median age: 43.6 years; 73.5% female). Of these, 123 patients (21.4%) were in the most disadvantaged neighborhood ADI decile. Compared to those in less disadvantaged neighborhood ADI deciles, patients in the most disadvantaged group had significantly higher rates of misdiagnosis (64.2% vs 46.7%, $p < 0.01$), longer diagnostic delays (65.1% vs 57.4% had symptoms for > 12 months prior to diagnosis), underwent more tumor resections ($3.3 \pm 1.6$ vs $2.2 \pm 1.7$, $p < 0.05$) and were more likely to receive joint replacements (16.3% vs 7.8%, $p < 0.01$). They also experienced higher local recurrence rates (56.9% vs 45.5%, $p < 0.05$), and were less likely to receive systemic therapies (27.5% vs 16.3%, $p < 0.01$). Notably, patients from the most disadvantaged group were not enrolled in clinical trials.

**Conclusion:** Results of this analysis suggest that adverse social exposome, as measured by ADI, is associated with significant disparities in the diagnosis and management of TGCT. This analysis does not consider the transient nature of living situations and temporality biases. Further research is needed to understand the impact of sociodemographic indicators on the clinical care of TGCT.

**Table. Patient treatments and recurrences**

| | Less Disadvantaged (n=451, 78.6%) | More Disadvantaged (n=123, 21.4%) | Total (n=574) (n, % column) |
|---|---|---|---|
| Mean surgeries ± SD | 2.2 ± 1.7* | 3.3 ± 1.6* | 2.2 ± 1.7 |
| Recurrence, n (%) | 205 (45.5)** | 70 (56.9)** | 275 (47.9) |
| 1 recurrence | 88 (19.5) | 23 (18.7) | 111 (19.3) |
| ≥ 2 recurrences | 117 (25.9)** | 47 (38.2)** | 164 (28.6) |
| Systemic therapies, n (%) | 124 (86.1) | 20 (13.9) | 144 (25.1) |
| Pexidartinib | 93 (75.0) | 15 (75.0) | 108 (75.0) |
| Imatinib | 35 (28.2)** | 10 (63.0)** | 45 (31.3) |
| Investigational Agents | 24 (19.4)** | 0 (0.0)** | 24 (16.7) |

Footnotes: * $p < 0.05$ determined by two-sided t-test. ** $p < 0.05$ determined by Mantel-Haenszel $\chi^2$

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## LONGTERM BURDEN OF DISEASE AND LIVING SITUATION IN DESMOID PATIENTS - A NON-INTERVENTIONAL STUDY

Peter Hohenberger, MD[1], Martin Eichler, MSc, PhD[2], Sergio Armando Zapata Bonilla, MD[3], Franka Menge, MD[4], Rebekka Hoffmann, MSc[5], Christina Baumgarten, none[6], Markus Schuler, MD, PhD[7], Jens Jakob, MD[4]

*[1]Mannheim University Medical Center, Mannheim, Baden-Wurttemberg, Germany; [2]University Hospital Carl Gustav Carus, Technical University Dresden, Dresden, Sachsen, Germany; [3]Clinic for Internal Medicine III, University Cancer Center, University Hospital Mainz, Mainz, Rheinland-Pfalz, Germany; [4]Sarcoma Unit, Department of Surgery, University Medical Centre Mannheim, Medical Faculty Mannheim, Heidelberg University, Mannheim, Baden-Wurttemberg, Germany; [5]University Hospital Carl Gustav Carus, Technical University Dresden, Dresden, Germany, Dresden, Sachsen, Germany; [65]SOS-Desmoid, e.V., SPAEN Sarcoma Patients EuroNet e.V, Wölfersheim, Hessen, Germany; [7]Faculty of Medicine, University Hospital Carl Gustav Carus, TU Dresden, Germany, Dresden, Sachsen, Germany*

**Objective:** Desmoid Tumors (aggressive Fibromatosis; DT) are rare soft tissue tumors that typically affect young adults, predominantly women and can lead to significant long-term morbidity. While its physical burden is well characterized, less is known about its long-term psychosocial and functional impact. This study aims to explore how DT affects employment, career development, family planning, and support needs from a patient-centered perspective.

**Methods:** We analyzed data from 109 participants suffering from DT who were recruited via a tertiary cancer center and a national patient advocacy group. The cohort has a median disease history of ten years. Quantitative data on employment, fertility planning, and unmet needs were collected via structured questionnaires. Qualitative input from patient commentaries complemented these findings.

**Results:** The mean age at survey was 45.7 years (SD = 14.1); mean age at diagnosis was 35.8 years (SD = 14.5). Among those employed full-time at diagnosis (n = 49), 51.0% (n = 25) changed their career path, primarily due to physical (89.9%, n = 44) and psychological limitations (56.2%, n = 27). Financial losses were reported by 52.2% (n = 24) of those affected. Of participants with incomplete family planning (n = 59), 79.7% expressed at least moderate desire for children, yet only 17.0% (n = 10) received counseling from reproductive medicine specialists. Unmet needs were most common for fear of progression (medium/high: 31.5%, n = 34) and uncertainty about the future (35.8%, n = 39). Emotional support needs declined over time ($p = 0.050$).

**Conclusion:** DT has a sustained impact on patients' lives. Structured return-to-work support, fertility counseling, and psychosocial care should be integrated into the care pathway to address the long-term needs of this predominantly young patient population.

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## PREDICTING FAILURE OF ACTIVE SURVEILLANCE IN DESMOID-TYPE FIBROMATOSIS USING RADIOMICS: AN INTERNATIONAL MULTI-CENTER STUDY

Stefanie N. Hakkesteegt, MD[1], Douwe J.J. Spaanderman, MSc[1], Chiara Colombo, N/A, MD[2], A.R.W.W. Schut, MD, PhD[1], Andrea Vanzulli, MD[3], Francesco Barretta, PhD[2], Carlo Morosi, MD[3], Marco Fiore, MD, FACS, FEBS[4], Peter C. Ferguson, MD, MSc, FRCSC[5], Harini Suraweera, MSc[6], Anthony M. Griffin, MSc[7], Lawrence M. White, MD[8], Joel Shapiro, MD, PhD[1], Danchen Ge, MSc[1], D.J.J. Grunhagen, N/A, MD, PhD[1], Arno J. van Leenders, N/A, MD, PhD[1], David Hanff, MD[1], Jan Jaap J. Visser, MD, PhD[1], Wiro Niessen, PhD[9], Stefan Klein, PhD[1], Rebecca Gladdy, MD, PhD[10], Alessandro Gronchi, MD[11], Martijn P.A. Starmans, PhD[1], C. Verhoef, N/A, MD, PhD[1]

*[1]Erasmus Medical Center, Rotterdam, Zuid-Holland, Netherlands; [2]Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Lombardia, Italy; [3]Fondazione IRCCS Istituto nazionale dei tumori, Milan, Lombardia, Italy; [4]Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Lombardia, Italy; [5]Department of Surgery, Sinai Health, Toronto, ON, Canada; [6]Princess Margaret Cancer Centre, University Health Network and Mount Sinai Hospital, Toronto, ON, Canada; [7]Orthopaedic Surgery, Sinai Health, Toronto, ON, Canada; [8]Mount Sinai Health, Toronto, ON, Canada; [9]UMC Groningen, Groningen, Groningen, Netherlands; [10]Mount Sinai Hospital, Toronto, ON, Canada; [11]Fondazione IRCCS Istituto Nazionale Dei Tumori, Milan, Milano, Lombardia, Italy*

**Objective:** Active surveillance (AS) is the recommended first-line approach for Desmoid-type fibromatosis (DTF). However, nearly a third of patients require active treatment. Identifying patients who will fail AS will help to choose the appropriate strategy upfront, leading to a more personalized treatment approach. Radiomics could provide a tool for this by capturing imaging patterns that may reflect underlying tumor biology related to progression or regression of DTF. This study aimed to assess whether radiomics can predict failure of AS in patients diagnosed with DTF.

**Methods:** This international multicenter study included data from three sarcoma centers in the Netherlands (NL), Italy (ITA), and Canada (CAN). Adult patients with extra-abdominal DTF initially managed with AS and an available baseline MRI were included. Clinical data on patient and tumor characteristics, tumor behavior during AS and failure of AS were collected. Failure of AS was defined as the initiation of active treatment. Tumors were segmented using minimally interactive deep learning-based segmentation, and radiomics features were extracted from T1w and T2w MRI scans. Prediction models to predict failure of AS vs. no failure were created using a combination of various machine learning approaches. Both an internal cross-validation using all available data and a leave-one-center-out external validation were used to assess the model's performance.

**Results:** A total of 223 patients were included (80 NL, 73 ITA, 70 CAN). During a median follow-up of 36 months, AS failed in 26% of patients (table). Internal validation of the T1w+T2w imaging model resulted in an overall AUC of 0.74 (95% CI: 0.54, 0.94). External validation resulted in an AUC of 0.61 (0.46, 0.75) in the Dutch cohort, 0.79 (0.63, 0.95) in the Italian cohort, and 0.75 (0.62, 0.89) in the Canadian cohort.

**Conclusion:** Predicting failure of AS with radiomics showed a reasonable performance and generalized well in the Italian and Canadian cohorts. However, the performance was lower in the Dutch cohort, highlighting potential challenges in cross-center generalizability.