
Translational Science in TARPSWG

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+ YOU!



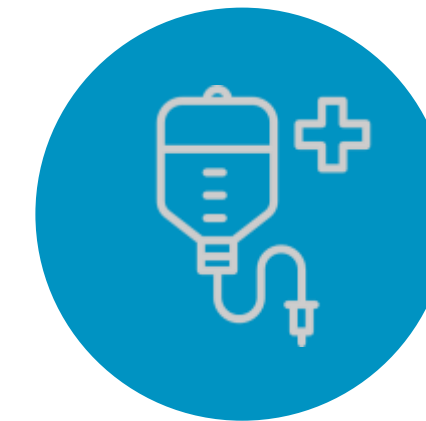
MISSION of TARPSWG



Evaluate current outcomes and evidence in the management of patients with primary, locally recurrent, and metastatic retroperitoneal sarcoma



Develop evidence-based expert consensus guidelines to standardize care of this complex and rare disease globally



Develop prospective clinical trials to address seminal clinical questions and enhance patient enrollment in prioritized clinical trials



Facilitate translational scientific research to advance fundamental knowledge and develop novel therapies



TARPSWG: Global Collaboration for Translational Science

How can we innovate/lead scientific
discovery in sarcoma?

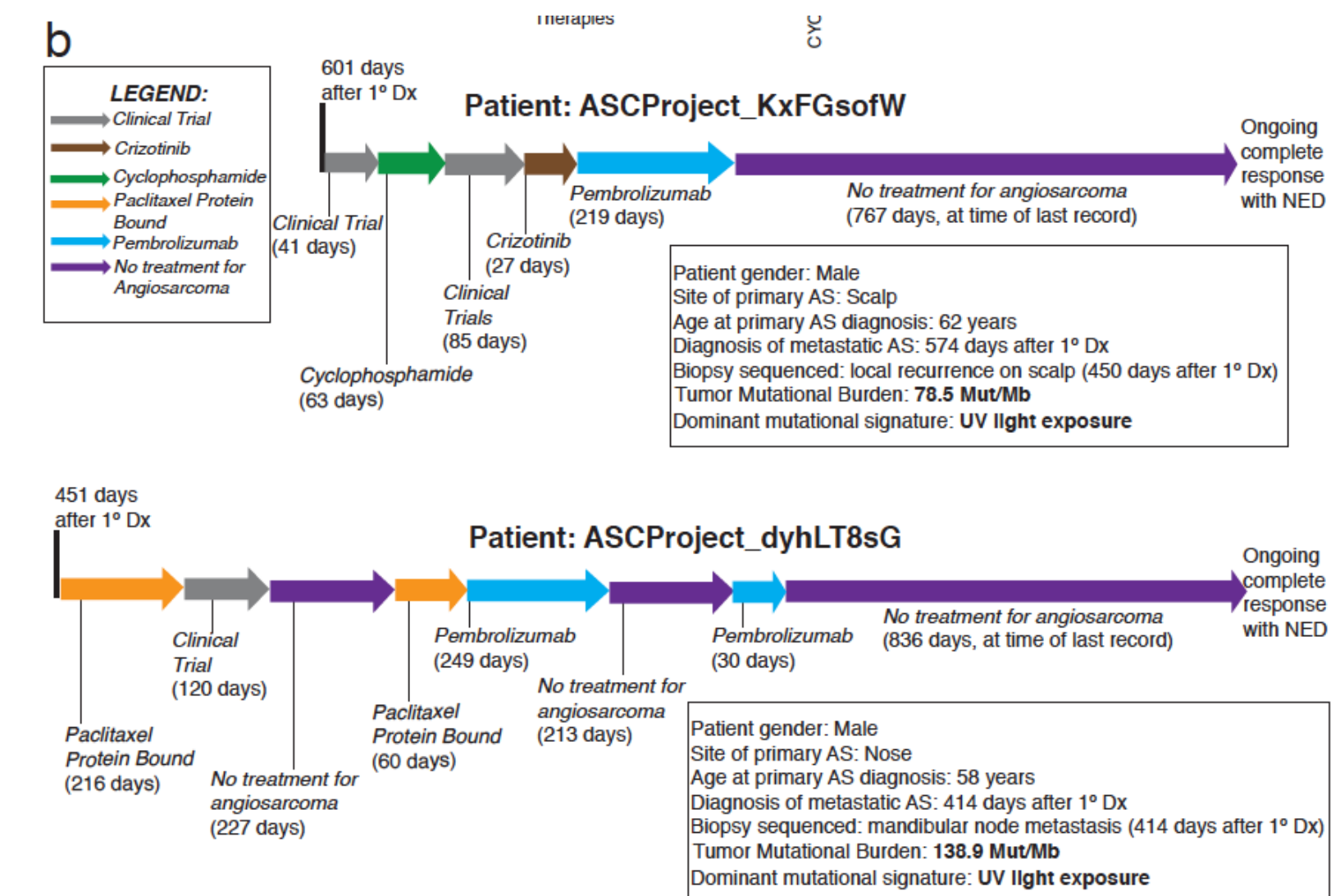
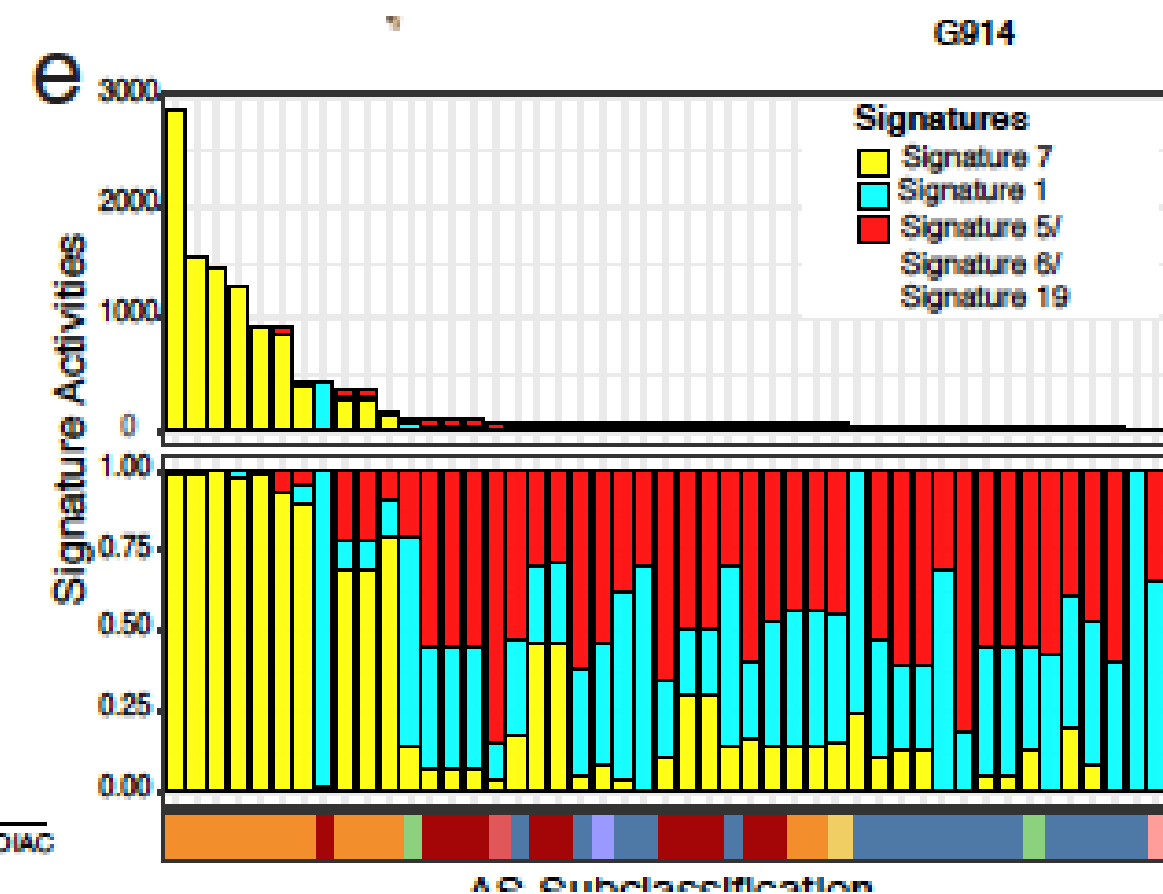
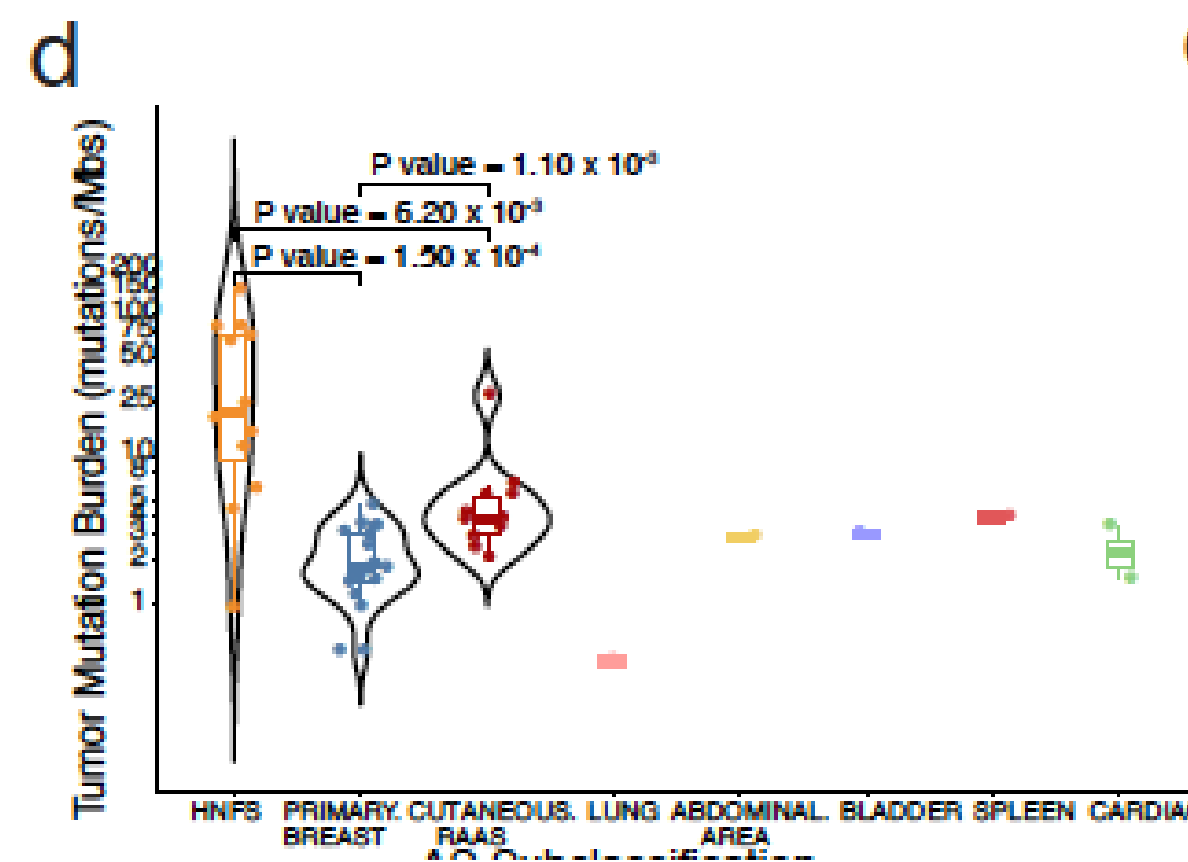
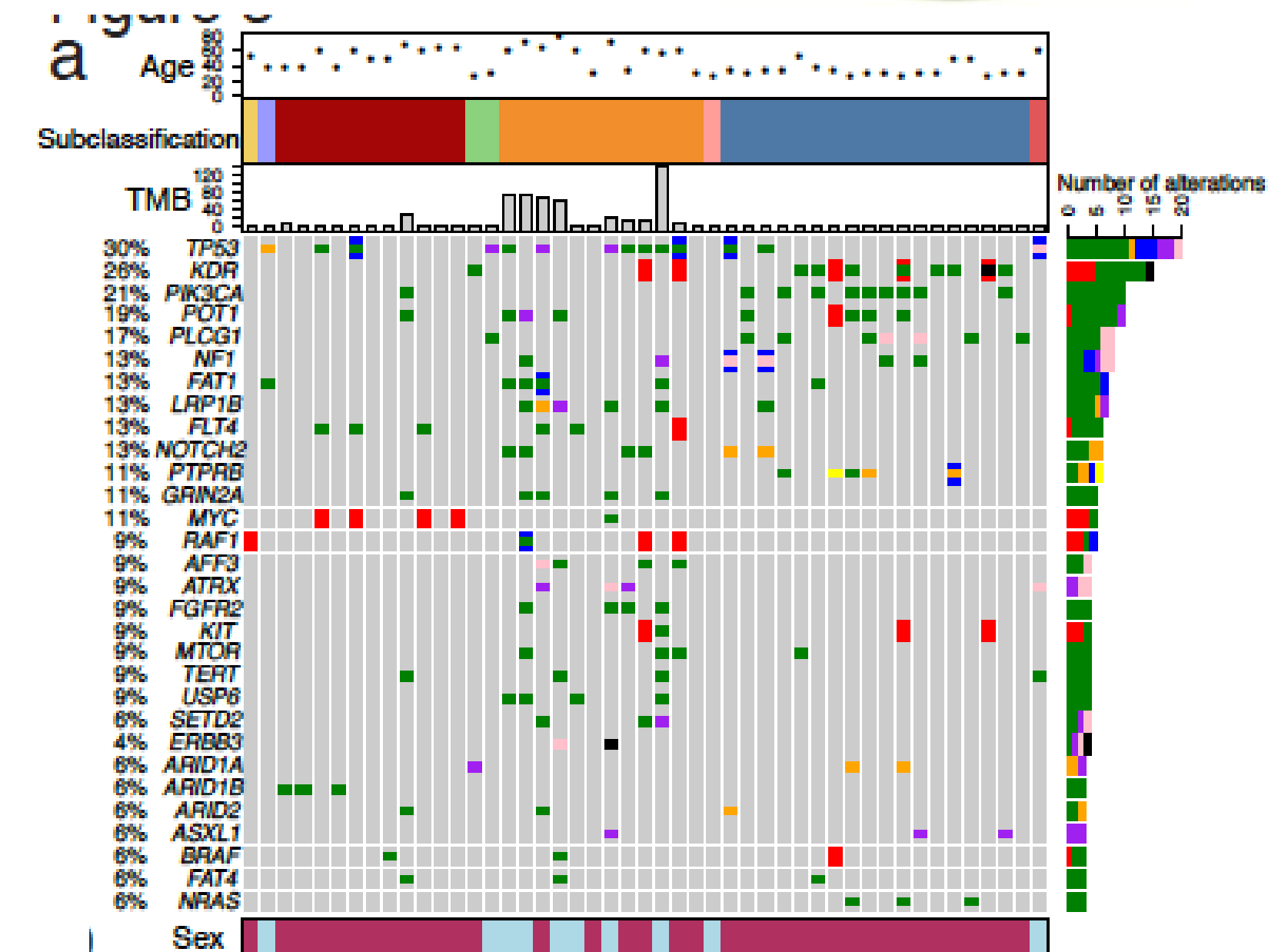
How can I contribute?

1. Identify key biologic questions based on clinical observation
 - Why do LMS patients have high rate of metastasis?
 - Does GIST mutational status correlate with site?
2. Correlative science: evaluate responders vs. non-responders in clinical trials
 - Not performed in STRASS1
 - Goal to understand non-responders vs. responders in STRASS2
3. Biobank patient specimens linked with patient outcome data
4. Network with basic scientists, drug development, bioengineering etc. to secure funding and advance knowledge in this rare family of disease

Example 2: Angiosarcoma project – Raut collaboration with Broad Institute (Cambridge, MA)

Direct-to-patient study of patients with angiosarcoma (any site)

- 30 genes recurrently altered in 47 samples (WES of tumor + matched germline), including **several not associated not previously reported with AS** (*PIK3CA*, *GRIN2A*, *NOTCH2*) [figure a]
- Head and neck AS (HNAS) commonly had **higher tumor mutational burden (TMB)** than AS from other sites [figure d]
- HNAS with TMB had dominant **mutation signatures associated with UV damage** [figure e]
- Since TMB is associated with response to immune checkpoint inhibitors, response to off-label **pembrolizumab** was evaluated in 2 pts – both had **sustained response** requiring no subsequent therapy (>2 yrs)





STRASS2 Correlative Studies

STRASS2 translational research - Eva Wardelmann, Paul Huang, Christina Messiou

Sample collection in STRASS 2

- Tissue – Pre-treatment biopsies and surgical specimens (FFPE mandatory, frozen optional)
- Bloods – At multiple time-points, (EDTA-mandatory, STRECK-mandatory, SST-optional)
- Primary aim is to identify biomarkers for NACT response and resistance
 1. Evaluating molecular/immune characteristics relevant to response
 2. Correlation of pathology and imaging features
 3. Radiomics for prediction of treatment outcome
- Funding has been obtained via the Sarcoma Accelerator Award to fund multi-omic analysis of tissue (WES, RNASeq, proteomics) with planned integration with radiomics and computational pathology

Virtual Biobanking: Navigating Specimen and Data Sharing



Virtual Biobanking for Retroperitoneal Sarcoma: A Transatlantic Australasian Retroperitoneal Sarcoma Working Group (TARPSWG) Initiative

Annals of Surgical
Oncology – online July 2,
2020

1. Survey sent out in 2018, 42 centers replied (71% of TARPSWG centers)
2. Majority of centers engaged in biobanking, limited banking of germline (18%). Specimens include FFPE, fresh frozen, blood, primary cell lines
3. Standardized biobanking protocol developed and published, key ensure expert pathology review
4. TARPSWG members indicated willingness to participate in translational studies
5. **Need to define working group to harmonize efforts: grant funding, contracts and scientific teams!**

Invitation to participate in this effort:

1. Develop important biologic questions, protocols approved by Translational Working Group
2. Participation in correlative scientific studies from clinical trials
3. Ongoing biobanking with clinical outcomes
4. Grant collaboration, engaging sarcoma research network

All feedback welcome!

Propose first working group meeting: November 2020, focus on STRASS2 correlative studies

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