

CLINICAL INTELLIGENCE

Clinical Intelligence Brief

Scientific, clinical, and implementation evidence landscape

PROJECT

Identify investigators working on immune checkpoint inhibitor toxicity, particularly myocarditis and myositis, and see w

GEOGRAPHIC SCOPE

Global

01

Executive Assessment

Advance a four-member portfolio: Nicolas Palaskas for prospective troponin surveillance and longitudinal toxicity–response observation; Salim S Hayek for myocarditis/myositis severity phenotyping and a validated cardiomyotoxicity risk score; Shuyang Zhang for early mortality predictors in ICI myocarditis with overlapping myositis; and Qianqian Song for large real-world, regimen- and comorbidity-stratified irAE and cardiovascular-event risk assessment. Together, these capabilities span early surveillance, acute event risk stratification, and population-level risk-model transportability in ICI-treated cancer populations.¹²³⁴⁵⁶⁷

The scientific priority is to distinguish pre-treatment susceptibility and early-on-treatment signals from predictors of severity after myocarditis has emerged. Palaskas's recruiting surveillance study directly centers troponin during immune-checkpoint therapy, whereas Hayek and Zhang provide complementary evidence that troponin magnitude, reduced LVEF, cardiomyocardial symptoms, electrocardiographic findings, and concomitant myositis identify high-risk myocarditis presentations.¹⁴⁵

The principal tradeoff is depth versus breadth. Hayek and Zhang offer the closest myocarditis/myositis-specific clinical evidence, while Song adds large-scale heterogeneity by cancer type, cardiovascular comorbidity, and checkpoint regimen but addresses broader cardiovascular adverse events and irAEs rather than a myocarditis-specific biomarker program. The resulting portfolio is geographically concentrated in the United States and China because the strongest documented objective-relevant evidence is concentrated there; the search scope also included France and Japan.⁴⁵⁶⁷

Near-term collaboration should focus on whether serial troponin surveillance and clinically available cardiomyocardial measures improve identification of patients who progress to serious myocarditis/myositis outcomes, and whether these approaches retain performance across cancer types, checkpoint regimens, and baseline cardiovascular risk. The documented studies provide stronger decision value for this question than broad ICI-toxicity summaries or uncharacterized publication records.¹⁴⁵⁶⁷

02

Recommended Collaborator Portfolio

Form an integrated clinical-risk collaboration led by Palaskas, Hayek, Zhang, and Song. Palaskas supplies prospective surveillance infrastructure; Hayek contributes a clinically specified cardiomyotoxicity prognostic framework; Zhang contributes early myocarditis mortality and overlap-myositis predictors; and Song contributes large-scale evaluation of regimen, cancer-type, and cardiometabolic heterogeneity. This configuration addresses the objective across the continuum from ICI initiation to early recognition and risk-stratified management.¹²⁴⁵⁶⁷

Search scope: Global. The recommended portfolio is concentrated in China, United States. This concentration reflects the strongest relevant evidence identified, not a restricted search or geographic quotas.

Nicolas Palaskas, MD

Prospective cardio-oncology surveillance lead

- Principal investigator of recruiting studies on troponin surveillance during immune-checkpoint therapy and on decoupling immunotherapy toxicity from cancer response.^{1,2}

M.D. Anderson Cancer Center · United States

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Salim S Hayek

ICI cardiomyotoxicity prognostic-model lead

- Hayek's work includes a melanoma cohort describing ICI-mediated myocarditis and myositis and a 748-patient multicountry registry that derived and externally validated a risk score for severe arrhythmia, heart failure, respiratory muscle failure, or cardiomyotoxicity-related death after ICI myocarditis.^{3,4}

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Shuyang Zhang

ICI myocarditis and overlap-myositis risk-stratification investigator

- A multicenter retrospective cohort of 161 ICI-myocarditis cases identified early presentation, strong early prognostic value of marked cTnI elevation and LVEF below 50%, and more fulminant early disease with concomitant myositis; multivariable predictors included LVEF, ALT, CKMB, and ICI-myositis.⁵

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Qianqian Song

Real-world ICI cardiovascular-risk and irAE stratification lead

- Song analyzed 6,526 ICI-treated adults for irAEs and 9,541 ICI initiators for cardiovascular adverse events, identifying associations with checkpoint combinations, cancer type, sex, age, myocardial infarction, heart failure, renal disease, and cardiometabolic comorbidities.^{6,7}

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Portfolio Trade-offs & Overlapping Expertise

- Hayek and Zhang overlap on myocarditis severity, troponin, LVEF, and myositis overlap; retaining both permits comparison of a formal prognostic score with an independent multicenter early-mortality analysis. Choosing only one would reduce independent clinical triangulation of acute cardiomyotoxicity risk.^{4,5}
- Song's broad cardiovascular and irAE cohorts overlap conceptually with Palaskas's toxicity surveillance but add population-scale regimen and comorbidity stratification rather than serial surveillance. The portfolio has limited documented evidence for HLA, autoantibodies, cytokines, or other immune-signature assays.^{1,6,7}

Candidate Decisions

RESEARCHER	DECISION	PROPOSED ROLE	COMPARATIVE RATIONALE
Nicolas Palaskas, MD	Advance	Prospective cardio-oncology surveillance lead	Compared with retrospective myocarditis cohorts led by Hayek and Zhang, Palaskas adds a prospective longitudinal surveillance setting that is directly aligned to early detection after ICI initiation.
Joe Elie Salem	Reserve	Observational myocarditis outcomes investigator	ATROPOS offers potentially valuable prospective-scale myocarditis outcome coverage, but the documented study information provides less detail on biomarker collection or early-risk methods than Palaskas's troponin surveillance program and Hayek's specified risk score.
You Lu	Reserve	Prospective immunotherapy outcomes investigator	The planned prospective outcomes design could support broader contextual analyses, but its documented focus is less specific to myocarditis, myositis, or predictive biomarkers than the advanced portfolio's surveillance and cardiotoxicity-focused evidence.
Yosei Kawamata	Reserve	NSCLC irAE risk-factor investigator	This provides a practical blood-count and regimen-based irAE signal in a defined NSCLC treatment window, but it is broader than myocarditis/myositis and narrower in population scope than Song's multi-thousand-patient real-world analyses.
Tyler Andrew Shugg	Defer	ICI drug-interaction study investigator	Drug-drug interaction assessment may become relevant to toxicity mitigation, but the documented study focus is less directly aligned to myocarditis/myositis prediction than the portfolio's surveillance and cardiotoxicity-risk capabilities.
Shuyang Zhang	Advance	ICI myocarditis and overlap-myositis risk-stratification investigator	Compared with Hayek's composite score, Zhang provides a focused independent analysis of early mortality and myocarditis-myositis overlap, making this contribution complementary rather than duplicative.
Jie Wang	Reserve	ICI toxicity-patterns investigator	Wang adds treatment-line toxicity context and an imaging-prediction perspective, but the documented work is less specific to myocarditis/myositis than Zhang's and Hayek's cardiotoxicity studies.
Apar K Ganti	Defer	Comorbidity-focused immunotherapy outcomes investigator	The comorbidity perspective is useful for clinical context, but Song supplies larger risk analyses spanning cardiovascular comorbidity and post-ICI cardiovascular events, while the advanced portfolio directly addresses myocarditis surveillance and severity.
Carolyn J Presley	Reserve	Comorbidity and peripheral-blood outcomes investigator	Early on-treatment blood-ratio analysis is relevant to risk research, but it addresses survival rather than myocarditis/myositis outcomes; Palaskas, Hayek, and Zhang offer closer alignment to early cardiotoxicity detection and severity.
Salim S Hayek	Advance	ICI cardiomyotoxicity prognostic-model lead	Compared with Zhang's early-mortality cohort, Hayek contributes a broader composite-outcome framework with formal score derivation and external validation; compared with Palaskas, this adds post-presentation severity stratification rather than surveillance.
Tian Zhang	Defer	Medical oncology research investigator	The documented material provides less objective-specific scientific detail than the clinical myocarditis, myositis, surveillance, and real-world risk evidence supporting the advanced portfolio.
Xianjun Yu	Reserve	Cancer-specific ICI adverse-event distribution investigator	Cancer-specific toxicity distributions can inform subgroup selection, but this evidence is less focused on myocarditis/myositis prediction than Song's individual-level cardiovascular-event analysis and the advanced cardiotoxicity portfolio.
Qianqian Song	Advance	Real-world ICI cardiovascular-risk and irAE stratification lead	Compared with the myocarditis-specific depth of Hayek and Zhang, Song adds population-scale characterization of baseline risk and treatment-regimen heterogeneity; compared with Palaskas, Song supplies retrospective breadth rather than prospective serial surveillance.

Researcher Landscape

The landscape separates four complementary advanced capabilities—prospective surveillance, myocarditis/myositis severity modeling, early overlap-syndrome mortality analysis, and population-scale cardiovascular/irAE risk stratification—from useful but less directly aligned studies of broad toxicity patterns, comorbidity, treatment-line effects, or planned outcomes research. [1,4,5,6,7,10,12,16](#)

RESEARCHER	INSTITUTION	COUNTRY	WHY	CONTACT
Nicolas Palaskas, MD Advance Principal investigator — NCT06337097 Trial contact; Principal investigator — NCT07382752	M.D. Anderson Cancer Center	United States	Leads recruiting ICI troponin surveillance and toxicity–cancer response observational studies, directly supporting longitudinal early-risk evaluation. ^{2,4}	✉ Email
Shuyang Zhang Advance Department Of Cardiology	Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100730, China.	China	Provides multicenter evidence on early mortality predictors and concomitant myositis in ICI myocarditis. ²	✉ Email
Salim S Hayek Advance Department Chair	University of Michigan, Ann Arbor, MI.	United States	Contributes myocarditis/myositis epidemiology and an externally validated ICI-myocarditis cardiomyotoxicity risk score. ^{6,11}	✉ Email LinkedIn ↗
Qianqian Song Advance Assistant Professor	College of Medicine, University of Florida, Gainesville, FL, USA. qsong1@ufl.edu .	United States	Provides large real-world analyses of irAE and cardiovascular adverse-event risk after ICI initiation. ^{6,11}	✉ Email LinkedIn ↗
Joe Elie Salem Reserve Principal investigator — NCT07633587	Groupe Hospitalier Pitie-Salpetriere	France	Leads a recruiting observational survival analysis of ICI-associated myocarditis. ⁴	—
You Lu Reserve Principal investigator — NCT07665697	Sichuan University	China	Leads a planned prospective non-interventional study of immunotherapy efficacy and outcomes in malignant tumors. ⁹	LinkedIn ↗
Yosei Kawamata Reserve	Clinical Research Institute, National Hospital Organization Kyushu Medical Center, Fukuoka, Japan.	Japan	Identified regimen, histology, and low-NLR associations with irAEs during ICI-plus-platinum induction therapy in NSCLC. ¹¹	—
Jie Wang Reserve	National Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China.	China	Characterized ICI toxicity patterns by treatment line and reviewed radiomics approaches for pneumonitis prediction. ^{12,13}	✉ Email
Carolyn J Presley Reserve Associate Professor With Tenure	Department of Internal Medicine, The Ohio State University Wexner Medical Center, Columbus, OH, USA. carolyn.presley@osumc.edu .	United States	Studied comorbidity, irAEs, survival, and baseline plus early on-treatment lymphocyte/monocyte ratio in ICI-treated patients. ^{17,15}	✉ Email LinkedIn ↗
Xianjun Yu Reserve	Fudan University Shanghai Cancer Center, Shanghai, China.	China	Synthesized cancer-specific distributions of ICI treatment-related adverse events across randomized trials. ¹⁶	✉ Email LinkedIn ↗
Tyler Andrew Shugg Defer Principal investigator — NCT07389525	Indiana University	United States	Leads a planned early-phase ICI drug-drug interaction study. ¹¹	✉ Email LinkedIn ↗
Apar K Ganti Defer Professor	University of Nebraska Medical Center-Fred and Pamela Buffett Cancer Center, Omaha, Nebraska, USA.	United States	Evaluated ICI outcomes in patients with important pre-existing organ dysfunction, including CHF. ⁴	✉ Email LinkedIn ↗

RESEARCHER	INSTITUTION	COUNTRY	WHY	CONTACT
Tian Zhang Defer Academic Medical Oncologist	Department of Internal Medicine, Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas.	United States	Is identified as an academic medical oncologist with publication records and a cancer-biology kinase-assay grant. 6 9 80 21 22	Email LinkedIn

05

Portfolio Derivation

How the portfolio was selected

111 evaluated

Scientific/geographic search + named trial investigators

13 shortlisted

Relevant research, trial leadership, public-health evidence, and grants

Portfolio comparison

Distinctive contribution, complementarity, and evidence overlap

4 recommended

Final ADVANCE portfolio

Why these investigators

Nicolas Palaskas, MD →

Principal investigator of recruiting studies on troponin surveillance during immune-checkpoint therapy and on decoupling immunotherapy toxicity from cancer response.^{[1](#)[2](#)}

Salim S Hayek →

Hayek's work includes a melanoma cohort describing ICI-mediated myocarditis and myositis and a 748-patient multicountry registry that derived and externally validated a risk score for severe arrhythmia, heart failure, respiratory muscle failure, or cardiomyotoxicity-related death after ICI myocarditis.^{[3](#)[4](#)}

Shuyang Zhang →

A multicenter retrospective cohort of 161 ICI-myocarditis cases identified early presentation, strong early prognostic value of marked cTnl elevation and LVEF below 50%, and more fulminant early disease with concomitant myositis; multivariable predictors included LVEF, ALT, CKMB, and ICI-myositis.^{[5](#)}

Qianqian Song →

Song analyzed 6,526 ICI-treated adults for irAEs and 9,541 ICI initiators for cardiovascular adverse events, identifying associations with checkpoint combinations, cancer type, sex, age, myocardial infarction, heart failure, renal disease, and cardiometabolic comorbidities.^{[6](#)[7](#)}

Complementary expertise

Qianqian Song → Real-world ICI cardiovascular-risk and irAE stratification lead

Shuyang Zhang → ICI myocarditis and overlap-myositis risk-stratification investigator

Salim S Hayek → ICI cardiomyotoxicity prognostic-model lead

Nicolas Palaskas, MD → Prospective cardio-oncology surveillance lead

Clinical Activity & Leadership

The documented clinical studies create complementary prospective opportunities: Palaskas’s recruiting studies address troponin surveillance and the relationship between toxicity and cancer response, Salem’s recruiting ATROPOS study addresses survival in ICI-associated myocarditis, and Lu’s planned observational study addresses immunotherapy outcomes more broadly. These designs support longitudinal outcome ascertainment, with the first two most closely aligned to cardiotoxicity questions.^{1,2,8,9}

Shugg’s planned early-phase interventional drug-drug interaction study addresses a distinct implementation question from myocarditis surveillance and prognosis. It is therefore best positioned as a conditional adjunct if medication-exposure effects become central to the clinical-risk strategy.¹¹

RESEARCHER	STUDY	ROLE	STATUS AND ENROLLMENT
Nicolas Palaskas, MD	STRICT - Surveillance With TROponin During Immune Checkpoint Therapy NCT06337097 	Principal investigator	recruiting · Enrollment 980 (estimated)
Nicolas Palaskas, MD	Decoupling Immunotherapy Toxicity and Cancer Response NCT07382752 	Trial contact; Principal investigator	recruiting · Enrollment 1,200 (estimated)
Tyler Andrew Shugg	Immune Checkpoint Inhibitor (ICI)-Drug-Drug Interaction (DDI) Study NCT07389525 	Principal investigator	not yet recruiting · Enrollment 80 (estimated)
Joe Elie Salem	ATROPOS: Survival Analysis of ICI-associated Myocarditis NCT07633587 	Principal investigator	recruiting · Enrollment 1,500 (estimated)
You Lu	Analysis of Efficacy and Outcomes of Immunotherapy for Malignant Tumors: A Prospective Non-interventional Clinical Study NCT07665697 	Principal investigator	not yet recruiting · Enrollment 500 (estimated)

Public-Health / Institutional Context

Two researchers have direct institutional signals relevant to care-setting context: Wang is affiliated with a National Cancer Center/National Clinical Research Center for Cancer, and Kawamata with a National Hospital organization. These settings may support evaluation of toxicity findings in structured oncology-care environments.

RESEARCHER	INSTITUTIONAL EVIDENCE	WHY IT MATTERS
Jie Wang	National Cancer Center	Wang’s affiliation with the National Cancer Center/National Clinical Research Center for Cancer places the documented ICI-toxicity work in a national cancer-care setting. ^{12,13}
Yosei Kawamata	National Hospital	Kawamata’s National Hospital affiliation provides a structured clinical setting for the documented multicenter NSCLC irAE risk-factor analysis. ¹⁶

Recommended Collaborator Deep Dives

01 Nicolas Palaskas, MD

M.D. Anderson Cancer Center

- Palaskas is advanced because the STRICT study is recruiting and explicitly centers surveillance with troponin during immune-checkpoint therapy. His additional recruiting observational study addresses the relationship between immunotherapy toxicity and cancer response, adding a longitudinal clinical context directly relevant to early post-treatment risk assessment.¹²

- He could lead prospective specification of serial troponin surveillance, temporal anchoring to ICI exposure, and linkage of surveillance findings to toxicity and cancer-response outcomes.^{1,2}
- This prospective surveillance capability complements Hayek's post-presentation prognostic score, Zhang's early mortality analysis, and Song's population-level risk stratification.^{1,4,5,6,7}

02 Salim S Hayek

University of Michigan, Ann Arbor, MI.

- Hayek is advanced for direct myocarditis/myositis relevance and for a multicountry registry analysis that derived and externally validated a score for serious cardiomyotoxic outcomes. Risk was associated with cardiomyocard symptoms, low QRS voltage, LVEF below 50%, escalating troponin elevation, and active thymoma; the score differentiated 30-day composite-outcome risk across score levels.^{3,4}
- He could lead clinical adjudication and severity-risk modeling for myocarditis with cardiomyocard overlap, including assessment of whether the documented score variables add value to early surveillance pathways.⁴
- Hayek adds formal outcome-risk modeling to Palaskas's prospective surveillance, while Zhang offers an independent multicenter analysis of early mortality and myositis overlap and Song evaluates broader baseline-risk heterogeneity.^{1,4,5,6,7}

03 Shuyang Zhang

Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100730, China.

- Zhang is advanced because the 161-patient multicenter ICI-myocarditis cohort directly identifies early high-risk features. ICI myocarditis presented at a median of four weeks, mortality concentrated within 60 days, and extreme cTnI elevation, reduced LVEF, CKMB, ALT, and concomitant myositis were associated with poorer early outcomes.⁵
- She could lead analysis of myocarditis–myositis overlap and early mortality endpoints, testing how cardiac injury, ventricular function, and skeletal-muscle involvement should be integrated into risk strata.⁵
- Zhang's early mortality and overlap-myositis focus complements Hayek's externally validated composite cardiomyotoxicity score and supplies clinically relevant endpoints for Palaskas's early-surveillance strategy.^{5,4,1}

04 Qianqian Song

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- Song is advanced for broad real-world characterization of risk heterogeneity after ICI initiation. In large cohorts, irAE risk and cardiovascular-event risk varied with checkpoint regimen, cancer type, demographic factors, prior myocardial infarction or heart failure, renal disease, and cardiometabolic comorbidities; cardiovascular events included arrhythmia, heart failure, and stroke.^{6,7}
- She could lead external risk-stratification analyses that evaluate whether surveillance and myocarditis severity models remain informative across checkpoint combinations, cancer types, and baseline cardiometabolic profiles.^{6,7}
- Song extends the portfolio beyond myocarditis case series and prospective troponin surveillance by quantifying population-level clinical and treatment heterogeneity relevant to transportability.^{6,7,14,5}

Recommended Next Evaluation

01 Compare serial troponin-based surveillance with the myocarditis severity variables of troponin magnitude, LVEF, symptoms, and ECG QRS voltage for prediction of serious cardiomyotoxic outcomes
This directly tests whether early surveillance improves on variables associated with adverse outcomes after ICI myocarditis becomes clinically apparent.^{1,4}

02 Evaluate a prespecified myocarditis–myositis overlap stratum using cardiac injury markers, ventricular function, CKMB, and skeletal-muscle involvement
Concomitant myositis was associated with more fulminant presentation and higher early mortality in the multicenter myocarditis cohort, and cardiomyocard symptoms contributed to Hayek’s outcome model.^{5,4}

03 Assess transportability of candidate surveillance and severity models across checkpoint regimens, cancer types, and baseline cardiovascular or cardiometabolic comorbidity strata
Real-world data show clinically meaningful heterogeneity in irAE and cardiovascular-event risk by regimen, cancer type, and comorbidity profile.^{6,7}

04 Compare early-event endpoints within the first 60 days after myocarditis presentation against longer-term survivor outcomes when evaluating biomarker and clinical-risk thresholds
Zhang’s cohort found that mortality was concentrated early and that several predictors influenced early rather than later mortality.⁵

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