PHenomenal Hope 2024

Knowledge, Research & Advocacy in PH

TEAM PHenomenal HOPE
LET ME BE YOUR LUNGS

PHenomenal Hope 2024

Knowledge, Research & Advocacy in PH

Racial and Ethnic Differences in PAH Care: Insights from a Multicenter Study in the United States

Murali Chakinala, MD

Professor of Medicine

Division of Pulmonary & Critical Care Medicine

Washington University of Medicine in St. Louis

Authors: Michelle Han[1], Gurinderpal Doad[1], Jenny Lam[1], Michelle Cho[1], Valeria Duan[2], Andrew Frick[2], Murali Chakinala[3], Harrison Farber[4]

[1]Actelion Pharmaceuticals US, Inc., Titusville, New Jersey, USA; [2]Trio Health, Inc, Louisville, CO, USA; [3]Division of Pulmonary and Critical Care Medicine, Washington University School of Medicine, St Louis, Missouri, USA; [4]Division of Pulmonary, Critical Care and Sleep Medicine, Tufts Medical Center, Boston, Massachusetts, USA

TEAM PHenomenal HOPE
LET ME BE YOUR LUNGS

Disclosures

- Dr. Chakinala has received research support (Washington University) from Janssen, Bayer, Medtronic, United Therapeutics, Keros Therapeutics, Acceleron/Merck, Trio Health Analytics, Gossamer Bio, Respira, Tectonic Therapeutic, and consults on advisory boards and committees for Bayer, United Therapeutics, Aerovate, Merck, Liquidia, Janssen, and Tectonic Therapeutics. Dr Chakinala also serves as a CME content reviewer for the Pulmonary Hypertension Association.

- This study was funded by Actelion Pharmaceuticals US, Inc, a Johnson & Johnson company

Background

- PAH is a complex, progressive and fatal cardiopulmonary disease
  - As there is no cure, foundational treatment pathways have modified the disease course for patients

- Previous literature has demonstrated disparities in PAH treatment by racial and ethnic groups
  - Hispanic patients were less likely to receive PAH-specific mediations compared to Non-Hispanic White patients[1]

1. Al-Naamani N, Paulus JK, Roberts KE, et al. Racial and ethnic differences in pulmonary arterial hypertension. Pulm Circ. 2017;7(4):793-796. doi:10.1177/2045893217732213

Study Objectives

- To describe demographic and disease state characteristics across racial/ethnic groups in the United States

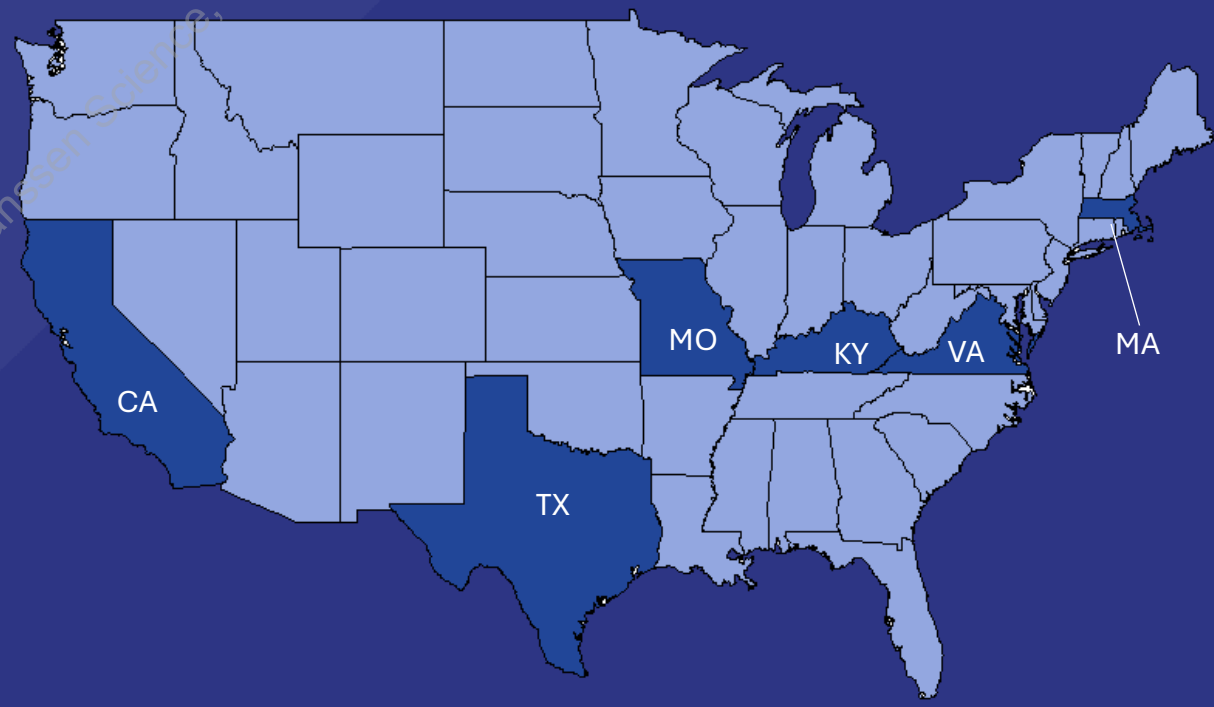
- To explore differences in PAH treatment by racial/ethnic groups

Methods

Data Source: TRIO CIPDR

Trio Comprehensive, Integrated Patient Data Repository (CIPDR)

- 9 Tertiary Care Centers[†] across 6 US States
- Identified patients ≥ 18 years old with prescriptions for PAH therapies through Specialty Pharmacy records
  - Jan 2019 – Dec 2020
- Those with confirmed PAH by RHC were enrolled into the registry
  - Mean PAP ≥ 25 mmHg
  - PCWP ≤ 15 mmHg
  - PVR ≥ 3.0 Wood units
- Clinical information from Electronic Health Records were entered by treating clinicians through HIPAA-secure online forms.
- Those with WHO PH Group 2, 3, 4, or 5 were not eligible



[†] Specialist care centers selected based on their treatment of patients with World Health Organization Group 1 PH; 8/9 were PHA-accredited PH care centers

Variables of Analysis

Demographic†	Clinical‡	Treatment

• Race/Ethnicity
• Ages at enrollment & diagnosis
• Employment status
• Gender
	• Etiology of PAH
	• Risk status
	  • 2022 ESC/ERS 4-Strata
		• Therapy regimens at enrollment
		  • # of PAH specific agents (i.e., Mono, Dual, Triple)
		  • Drug class (e.g., Prostacyclin pathway agent (PPA))
		  • Drug route (e.g., intravenous, subcutaneous)

† Captured at enrollment; ‡ Captured from 180 days prior up to 30 days following enrollment

Results

Study Population

N=946

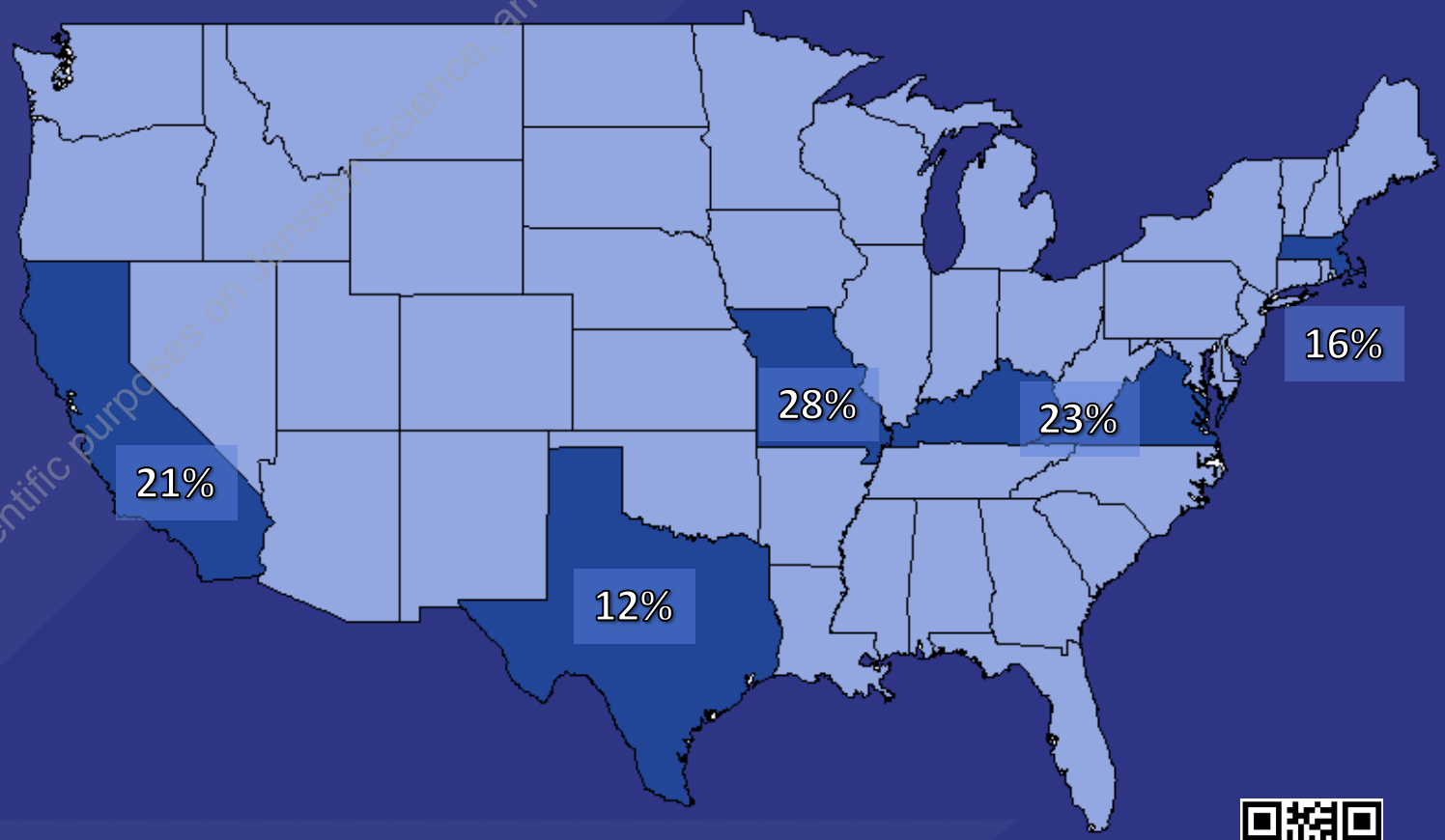
- Patients with PAH and ≥ 1 PAH treatment in the observation window†

N=618

- Patients enrolled within the observation window† and identified in racial/ethnic groups of interest

N = 563

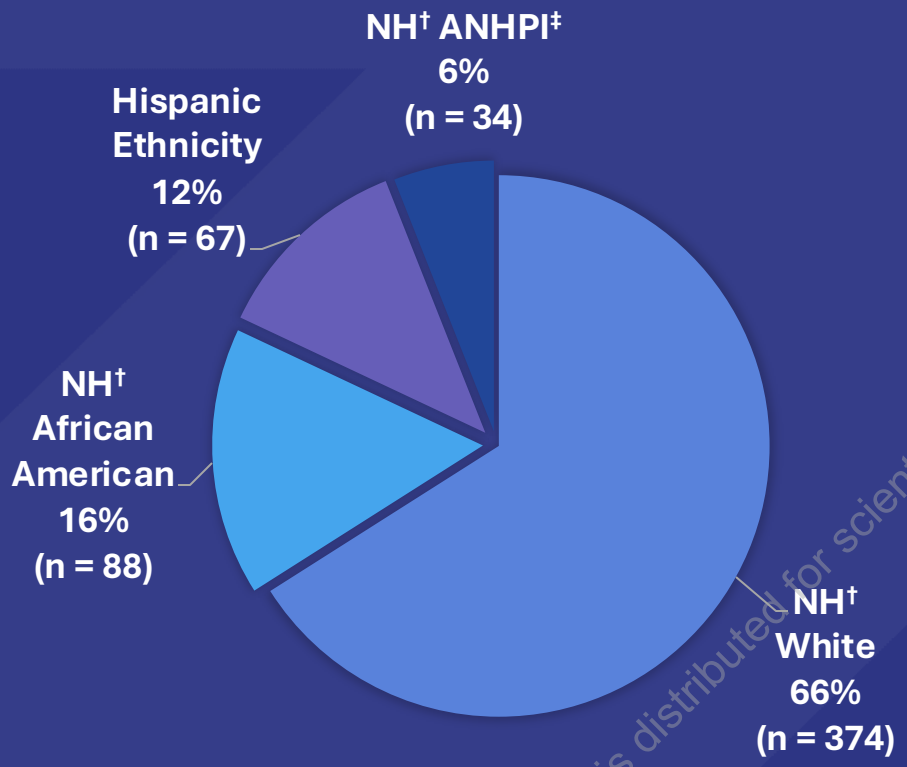
- Patients with PAH therapy at enrollment



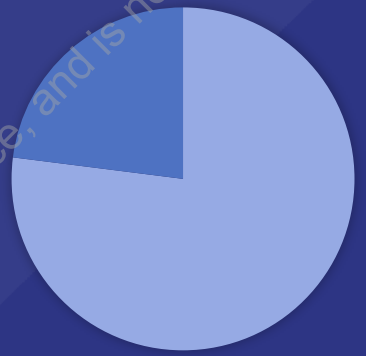
†Jan 2019 to Dec 2020

Demographic Characteristics

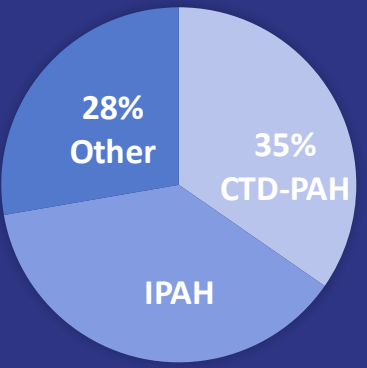
Distribution of Race/Ethnicity (N = 563)



77%
Female



38%*
IPAH



52%
Unemployed

Age
At Enrollment

Median
59
IQR:
49,69

†Non Hispanic, ‡Asian, Native Hawaiian, or other Hawaiian/Pacific Islander; *N = 525

Study Objectives

- Non-white patients were diagnosed at a younger age than Non-Hispanic (NH) White patients
  - Hispanic patients were diagnosed at youngest median age
- Highest unemployment was in NH ANHPI (65%) and lowest in NH African American patients (42%)

Age at Diagnosis and Unemployment by Race/Ethnicity

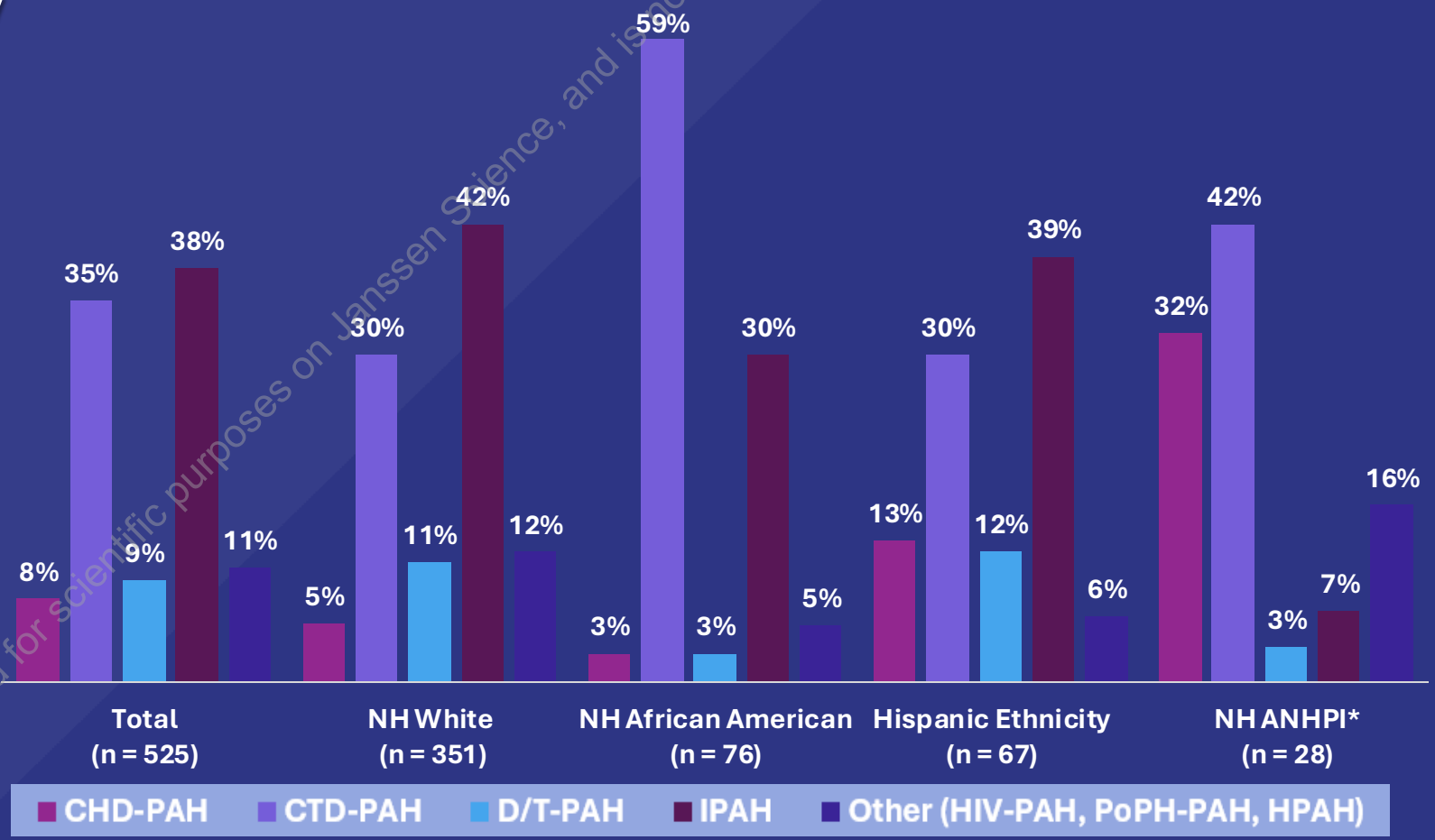
Median (IQR) or %	Total	NH White	NH African American	Hispanic Ethnicity	NH ANHPI†
Age at Diagnosis	51 (41 - 63), N=468	55 (44 - 66), N=315	52 (42 - 61), N=67	38 (32 - 46), N=58	47 (32 - 58), N=28
Age at Enrollment	59 (49 – 69), N=563	63 (52 – 71), N=374	57 (47 – 67), N=88	47 (41 – 58), N=67	58 (41 – 70), N=34
Unemployment	52%, N= 563	52%, N=374	42%, N=88	54%, N=67	65%, N=34

† Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

PAH Etiology

- Distribution of PAH etiology varied significantly by racial/ethnic group
- NH African American patients demonstrated highest prevalence of CTD-PAH
- D/T-PAH was more prevalent in Non-Hispanic (NH) White and Hispanic patients than in other groups

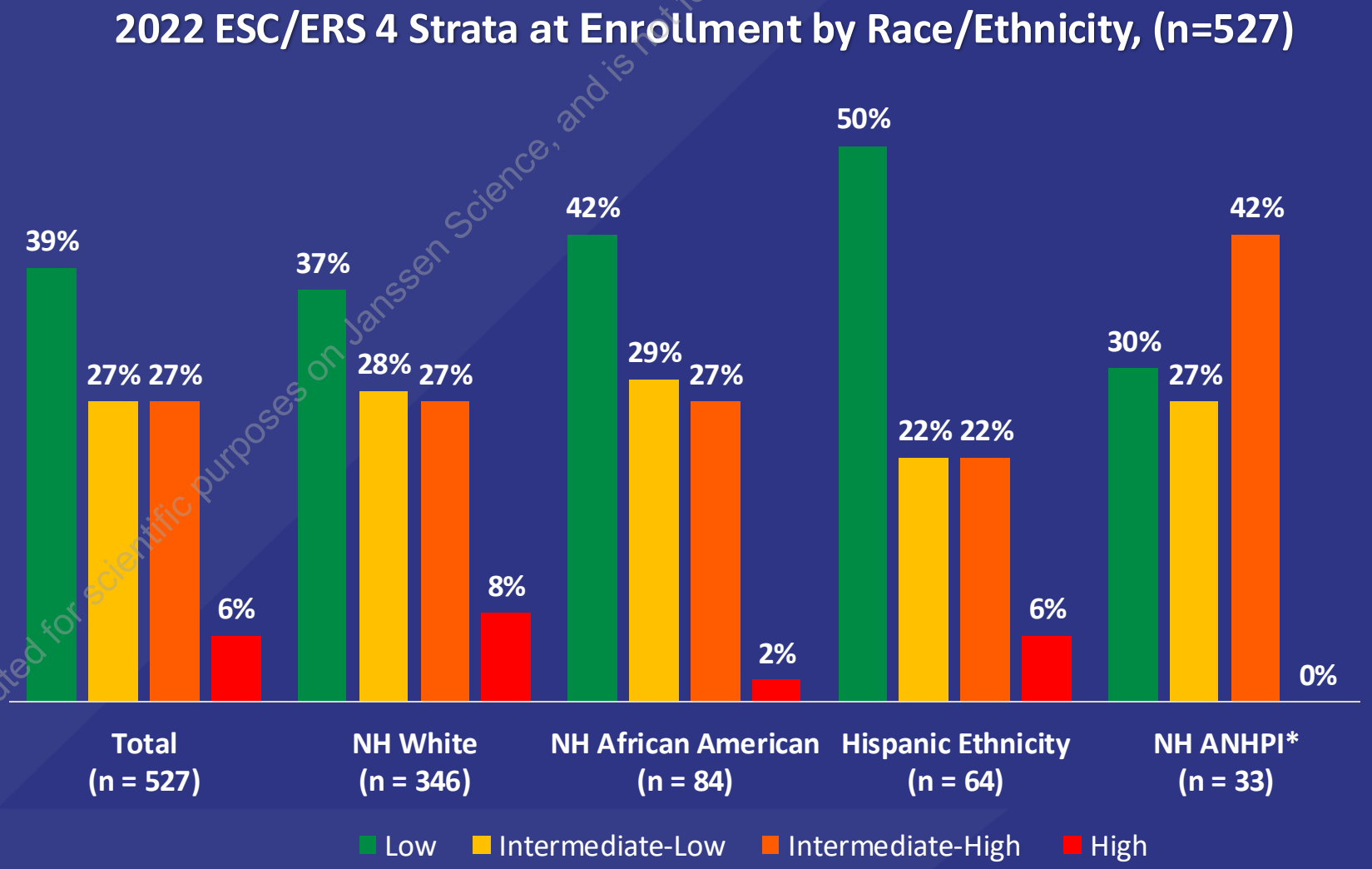
PAH Etiology by Race/Ethnicity, (n = 525)



*Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

2022 ESC/ERS 4-Strata Risk Status

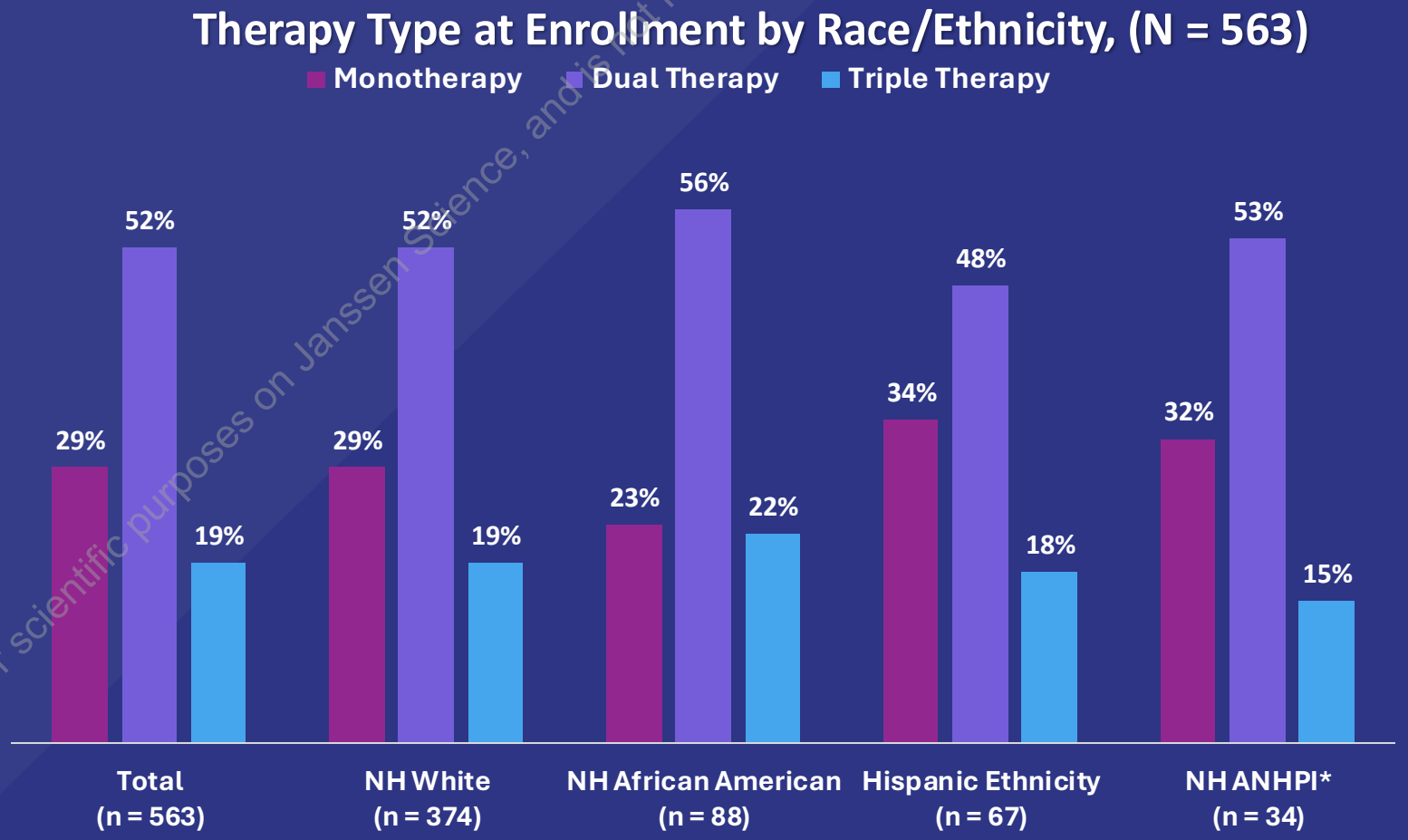
- Most patients were **intermediate low** or **intermediate high risk** across all racial/ethnic groups, except for Hispanic patients who had a lower risk than other racial/ethnic groups
- NH ANHPI had the lowest proportion of low risk patients and no high risk patients



*Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

Treatment Characteristics at Enrollment

- Most patients were prescribed Dual combinations† across all racial/ethnic groups
- 19% of all patients were prescribed Triple therapy†
- NH African Americans were prescribed monotherapy at the lowest rate among all racial/ethnic groups
- Hispanic patients had the highest prevalence of monotherapy

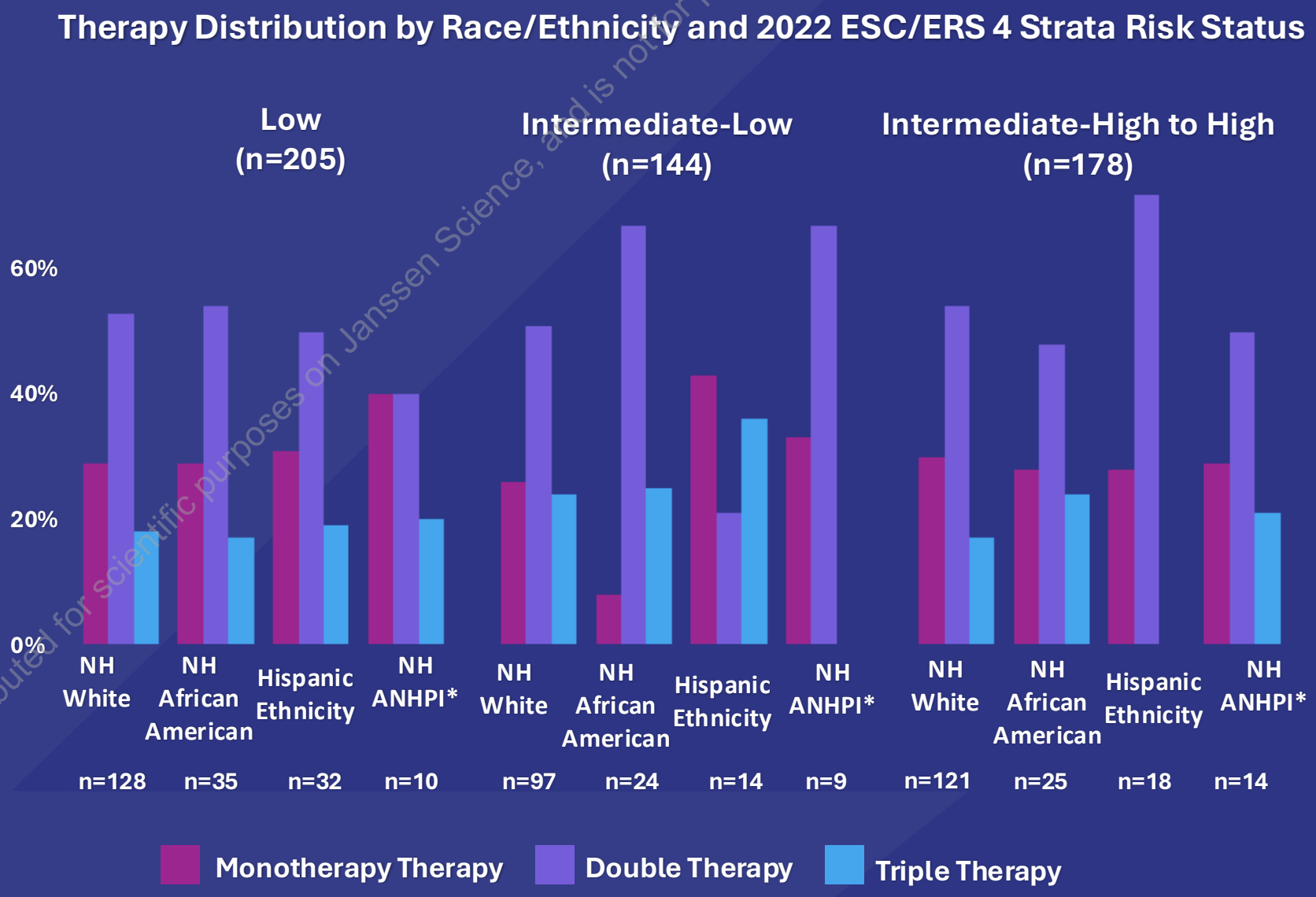


† Based on number of prescribed Drug Classes: **PDE5i**: Sildenafil, Tadalafil; Prostacyclin: Epoprostenol, Iloprost, Treprostinil, Selexipag; **ERA**: Ambrisentan, Bosentan, Macitentan; **sGC Stimulator**: Riociguat

*Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

Therapy, Race/Ethnicity, and Risk Status at Enrollment

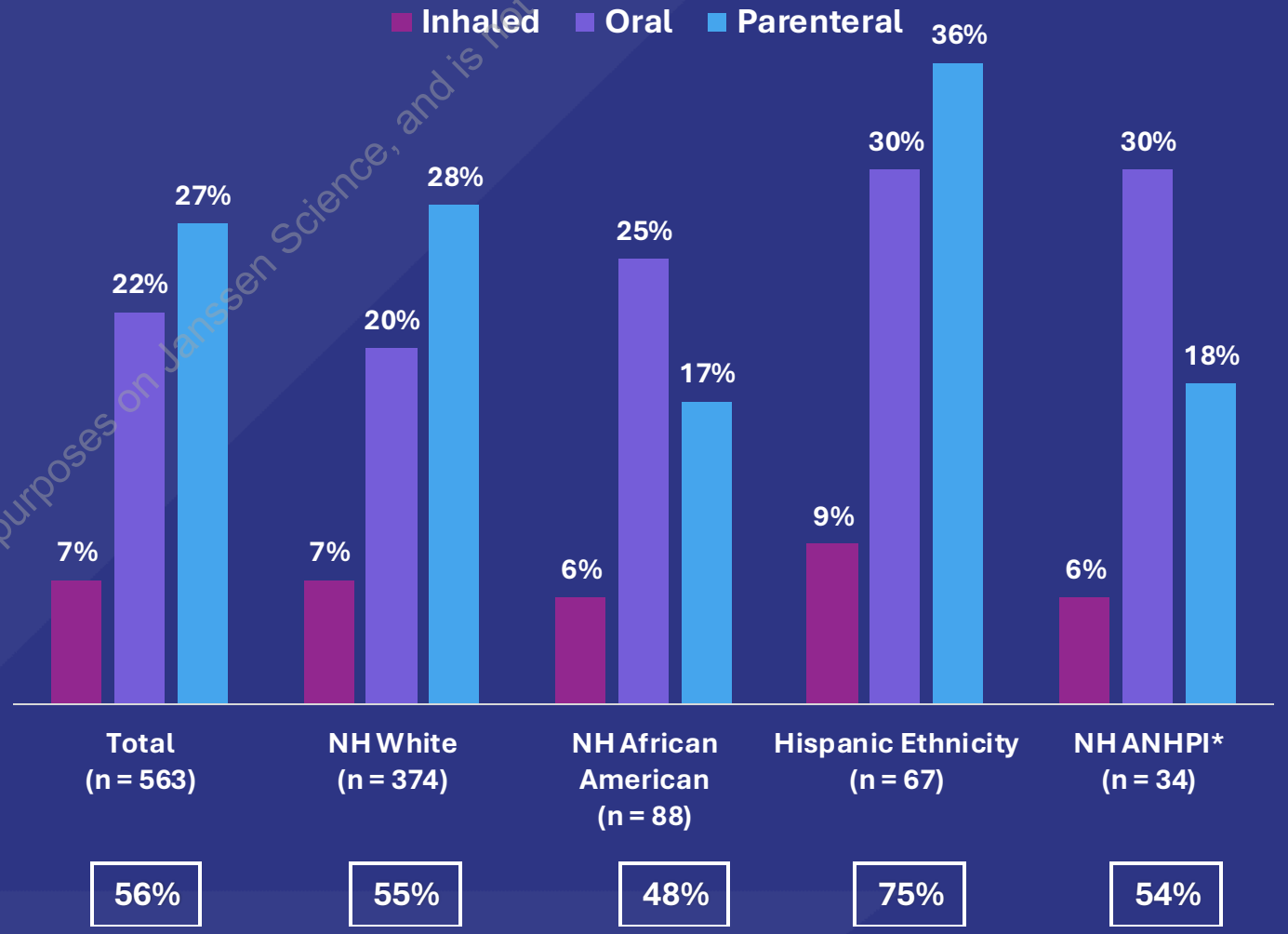
- Varying proportions of Dual and Triple therapy were observed among those above Low risk
- Triple therapy was not observed among intermediate-high to high-risk Hispanic patients (n = 18)
- Low risk NH ANHPI patients (n = 10) were more frequently prescribed monotherapy



*Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

Prostacyclin Use by Race/Ethnicity

- 56% (315/563) patients had a PPA prescription at enrollment
- Oral PPA
  - NH White patients were less likely to be prescribed oral PPAs compared to Non-White patients (20% vs. 28%) (p=0.03)‡
- Parenteral prostacyclins
  - Despite similar proportions of high risk†, Hispanic patients were more frequently prescribed parenteral prostacyclins than NH White patients (36% vs. 28%) (p=0.04)‡



† 2022 ESC/ERS 4 Strata Risk, ‡Fisher's exact test
*Asian, Native Hawaiian, or other Hawaiian/Pacific Islander

Limitations

- Limited details on payer and prior treatment, as well as limited sample size
- Data may not be representative of PAH care across the US, and in non specialty centers
- No adjustment for other characteristics such as comorbidities

Conclusions

- Differences in baseline characteristics were observed
  - Hispanic patients were diagnosed at a younger age than NH White patients
  - D/T-PAH was more prevalent in NH White (11%) and Hispanic (12%) patients
- Differences in treatment patterns were observed between individual groups considered as Non-White
  - Hispanic patients with intermediate-high to high risk were not on triple therapy and, overall, had a higher use of PPAs
  - Less aggressive PPA treatment observed for NH African American patients
- Results suggest differences in clinical presentation of PAH by racial/ethnic groups, with opportunity for optimization of treatment across different socioeconomic and racial/ethnic groups
- Further understanding of the contributing factors, especially socioeconomic, leading to differences between races/ethnicities in PAH treatment is needed