

The 10 Year Incidence of Glaucoma Among Treated and Untreated Ocular Hypertensive Patients

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(OHTS)

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- I do not have any financial interests or relationships to disclose.

Ocular Hypertension Treatment Study (OHTS)

Primary Goals

- ❖ Evaluate the safety and efficacy of topical ocular hypotensive medication in delaying or preventing the development of POAG in individuals with elevated IOP
- ❖ Identify baseline demographic and clinical factors that predict which participants will develop POAG

The OHTS Entry Criteria

- ❖ Age 40 - 80
- ❖ Normal visual fields
 - Humphrey 30-2
- ❖ Normal optic discs
- ❖ Untreated IOP:
 - 24 to 32 mm Hg in one eye
 - 21 to 32 mm Hg in fellow eye

OHTS Phase 1 Eligibility Criteria

Randomization

Medication

Topical treatment to lower IOP 20%
and IOP \leq 24 mm Hg

Adjust therapy if
target not met

Observation

No topical treatment to lower IOP

Monitoring

Humphrey 30-2 q6 months
Stereoscopic disc photos annually

Reproducible Abnormality

3 consecutive visual fields and/or 2 consecutive sets of optic disc photographs
as determined by masked readers at ODRC or VFRC

POAG

Visual field and/or optic disc changes attributed to
POAG by masked Endpoint Committee

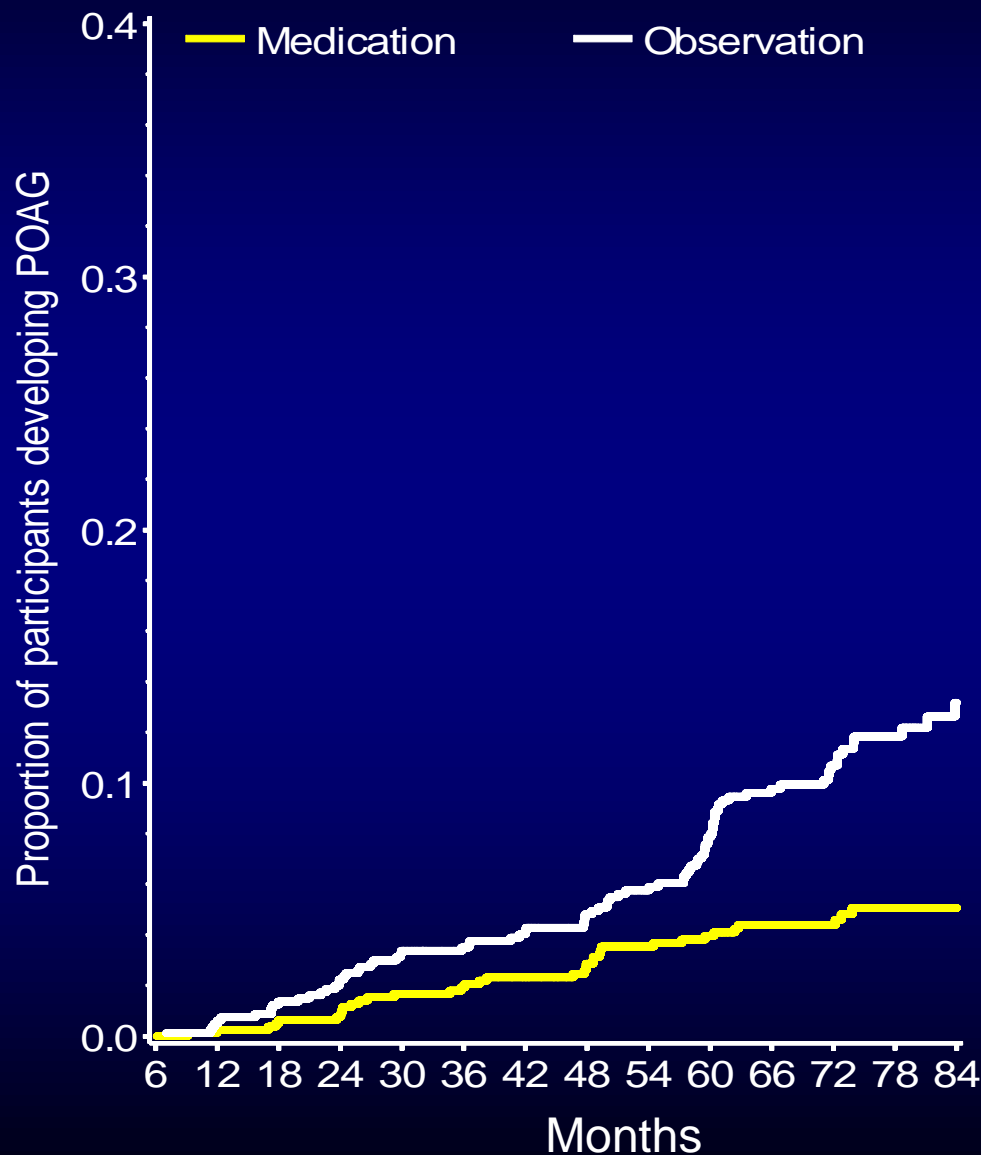
OHTS Phase 2

All Participants Offered Treatment

OHTS Phase 1: Primary POAG Endpoints

Log rank P-value<0.001, hazard ratio 0.40, 95% confidence interval (0.27, 0.59)

Cumulative proportion POAG at 60 months, 9.5% in OBS and 4.4% in MEDS



Goal

We thought it would be helpful for clinicians and patients to know 10 year incidence of POAG in treated and untreated OHTS participants.

Methods

Take 10 year data from treatment group.

Model 10 year data from observation group –
mean 7.5 year f/u without treatment.

Results

Divided the participants into 3 levels of baseline risk based on IOP, age, CCT, vertical cup/disc ratio and PSD.

At all 3 levels of baseline risk, treatment reduces the 10 year incidence by about 50%.

Results

The absolute reduction is greatest in the high risk group and least in the low risk group.

10 Year Incidence of POAG Among Treated and Untreated OHTS Participants

	Untreated for 10 years	Treated for 10 years
	POAG (95% CI)	POAG (95% CI)
Low Risk <6%*	7% (4%-11%)	4% (2%-5%)
Medium Risk 6% to 13%†	18% (13%-26%)	8% (6%-10%)
High Risk >13%‡	42% (32%-54%)	19% (15%-23%)

*Baseline risk of developing POAG <6%, †Baseline risk of developing POAG 6-13%

‡Baseline risk of developing POAG ≥ 13%

Results

Within each tertile of risk, African Americans and others have similar outcome. i.e. African Americans do benefit from treatment.

10 Year Incidence of POAG Among Treated and Untreated OHTS Participants

	Ethnicity	Untreated for 10 years	Treated for 10 years
		POAG (95% CI)	POAG (95% CI)
Low Risk <6%*	Others	7% (4%-11%)	3% (2%-5%)
	African American	8% (5%-12%)	5% (3%-8%)
Medium Risk 6% to 13%†	Others	18% (13%-26%)	8% (6%-10%)
	African American	19% (13%-29%)	9% (6%-12%)
High Risk >13%‡	Others	40% (31%-52%)	18% (14%-22%)
	African Americans	45% (34%-59%)	21% (16%-26%)

*Baseline risk of developing POAG <6%, †Baseline risk of developing POAG 6-13%

‡Baseline risk of developing POAG ≥ 13%

Discussion

The incidence of POAG appears to be roughly linear over 10 years. It is not clear if this can be extrapolated to 20 years or more.

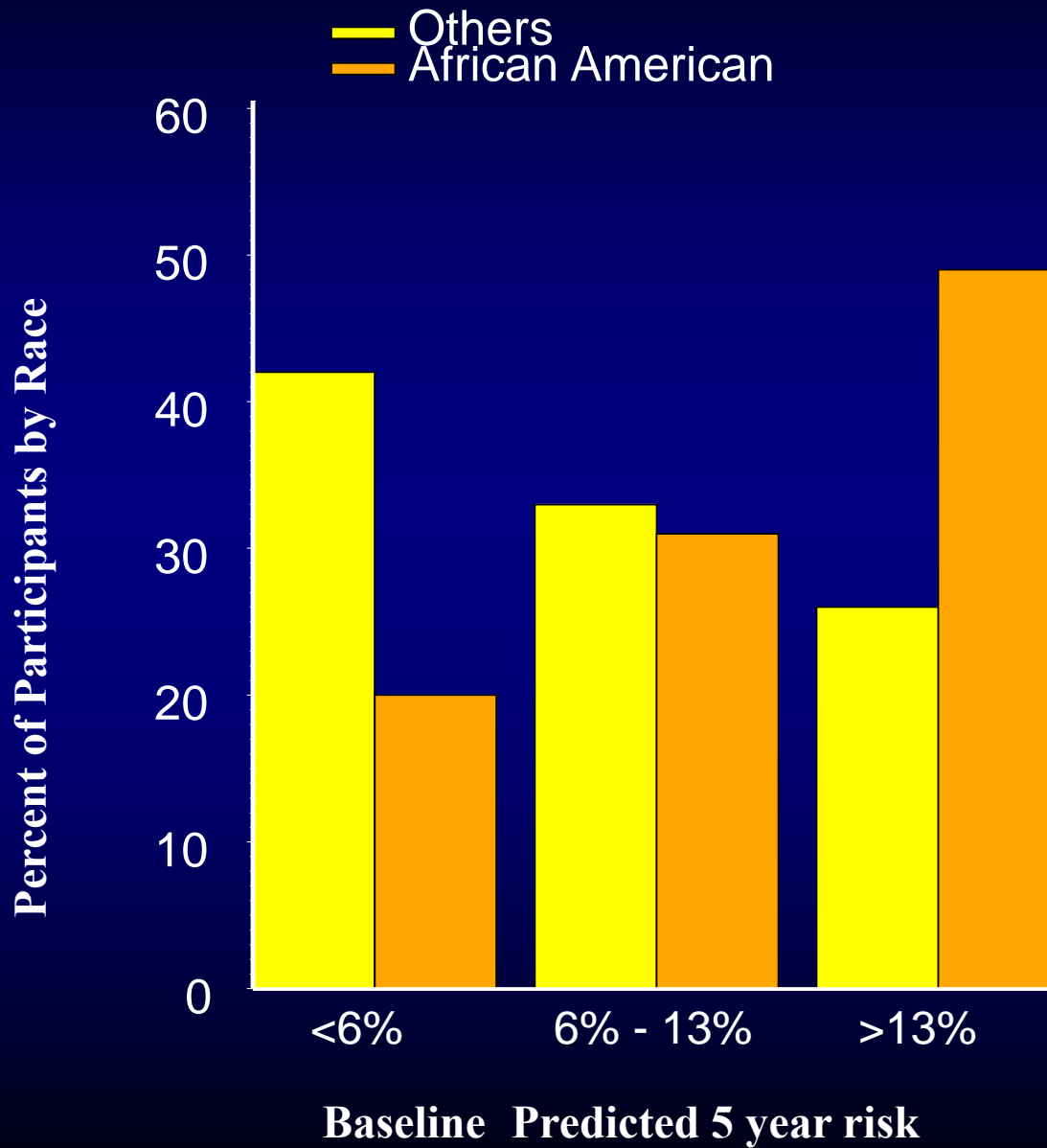
Discussion

- ❖ OHT patients at high risk may benefit from closer follow-up and early treatment, while low risk patients can have less frequent follow-up and may not need early treatment.
- ❖ Patient specific decisions depend on age, health status, life expectancy and preference.

Discussion

African Americans have a higher incidence of POAG but the same incidence within the same tertile of risk. This seeming contradiction is explained by the fact that African Americans are over-represented in the high risk group and under-represented in the low risk group.

OHTS: Distribution of 5 Year Baseline Risk by Race



Results through 3/09/09

Summary

Medical treatment reduces the 10 year incidence of POAG by about 50%.

The absolute reduction is greatest in the high risk group.

The effect of treatment is similar in African Americans and others after adjusting for the higher baseline risk status of African Americans.