RACE AND VTE

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BACKGROUND

Venous Thromboembolism (VTE) is the third most common cause of cardiovascular (CV) deaths. Risk stratification reveals higher susceptibility in African Americans, intermediate risk in Hispanics, and lowest risk in Caucasians and Europeans.
I reviewed published literature to understand the correlation between VTE and various racial groups, with and without COVID-19.

The mean ages across the three studies were consistent for both black and white participants in the ARIC study. CHS participants were generally older compared to the other groups (ARIC and REGARDS). REGARDS participants had an age in between the 2 other groups. The BMI was within the range for all the 3 groups

RACE, COVID-19, AND VTE

- Patients hospitalized with COVID-19 exhibited an increased risk of thromboembolic events.
- A study involving 21,528 adults hospitalized with COVID-19 across 107 centers with a mean age of 61.2 ±17.9 years showed the following:

Table 2. Risk of VTE in Patients with COVID-19

Race/ Ethnicity, n (%)	All Patients (n=21,528)
Non-Hispanic White	8,202 (38.1)
Non-Hispanic Black	5,531 (25.7)
Hispanic	5,478 (25.4)
Native American	106 (0.5)
Asian	857 (4.0)
Pacific Islander	78 (0.4)
Other	1,276 (5.9)

COMORBIDITIES

Three prospective studies were reviewed: Atherosclerosis Risk in Communities Study (ARIC), Cardiovascular Health Study (CHS), and Reasons for Geographic and Racial Differences in Stroke study (REGARDS). Additionally, I examined the relationship between race, COVID-19, and VTE.

USE OF ANTIPLATELET AND ANTICOAGULANTS

27.1% (5819/21,458) of the patients had used an antiplatelet drug at the time of admission (28.3% (3285/11,605) of male patients, 25.7% (2534/9853) of female patients, 33.7% (2754/8183) of non-Hispanic patients).

ANTICOAGULANT THERAPY AT THE TIME OF ADMISSION

14.1% (2964/21,086) of patients had used anticoagulant therapy at the time of admission (14.7% (1677/11,423) of male patients, 13.3% (1287/9863) of female patients, 18.7% (1503/8039) in non-Hispanic White patients, 11.5 Native American patients).

PATIENTS WITH IN-HOSPITAL ANTICOAGULANTS

- 25.0% (3468/13,847) were on subcutaneous heparin injections.
- 47.4% (6547/13,822) were on low doses of LMWH.

ARTERIAL THROMBOEMBOLISM

- 4.3% in Men
- 3.5% in Women
- 5% in Non-Hispanic Black patients
- 2.3-4.7% in other races and ethnicities

MEN VS. WOMEN FOR VTE EVENTS

Women were less likely to experience venous thromboembolic events and ATE.

VTE IN NON-HISPANIC VS. NON-HISPANIC BLACK PATIENTS

Compared with non-Hispanic White patients, non-Hispanic Black patients had the highest likelihood of VTE events. Implications include:

- Patients who are hospitalized with COVID-19 remain at elevated risk for venous and arterial thromboembolic events.
- Men and non-Hispanic Black adults have a higher likelihood of events and may benefit from targeted prophylaxis regimens.

USE OF ANTIPLATELET AND ANTICOAGULANTS

- Antiplatelet use was 27.1% (5819/21,458), Men (28.3%, 3285/11,605), Women (25.7%, 2534/9853), Non-Hispanic White patients (33.7%, 2754/8183),
- Other races and ethnicities (range, 9.0%-29.9%).

ANTICOAGULANT THERAPY

- Men (14.7%, 1677/11,423)
- Women (13.3%, 1287/9863)
- Non-Hispanic White patients (18.7%, 1503/8039)
- Other races and ethnicities (range, 6.4%-13.3%)
- Among patients for whom in-hospital anticoagulant information was available, most were either on subcutaneous heparin injections (25.0%, 3468/13,847) or low doses of LMWH (47.4%, 6547/13,822).

VENOUS THROMBOEMBOLIC EVENTS

- 3.7% (805/21,528) VTEs
- 8.3% (553/6604) versus 1.7% (251/14,823) ICU/ward treatment
- 2.4% (508/21, 528) of patients with DVT
- 1.8 (385/21,528) PE
- 0.04%, (487/11,644) VTEs in men
- 3.2%, (318/21,528) VTEs in women
- 4.9% (271/5531) VTEs in non-Hispanic Blacks
- Non-Hispanic Black had the highest likelihood of VTE when compared with non-Hispanic Whites.
- Hispanic ethnicity demonstrated a protective association for VTE.
- The interaction between sex, race, and ethnicity was not statistically significant.

ARTERIAL THROMBOEMBOLISM

- Non-Hispanic Black patients had the highest likelihood of ATE vs non-Hispanic White patients.
- The interaction between sex, race, and ethnicity was not statistically significant.
- Race and ethnicity have an impact on patients with COVID-19.
- Non-Hispanic Black patients were significantly more likely to develop both VTE and ATE.

CONCLUSION

VTE is the third leading cause of CV death. There is a heightened risk of VTE among Black Hispanics compared to other demographic groups. The risk of ATE was notably higher in men and non-Hispanic Black patients compared to other racial cohorts.

REFERENCES

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