

Integrating Cardiovascular Disease Risk Factor (CVDRF) Screening into HIV Care in Swaziland

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Outline

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Background:

HIV and CVD in Sub-Saharan Africa

- Rising global prevalence of CVD risk factors (CVDRF)
- Increasing numbers of people living with HIV have CVD and CVDRF such as diabetes, hypertension, high cholesterol, and tobacco use.
- Therefore, more communities are affected by the double burden of HIV and CVD
- In order to ensure long-term success of HIV programs, we must also address non-AIDS morbidity and mortality, such as that caused by CVD and its RFs

Background: Swaziland

- Population ~ 1.2 million
- Adult HIV prevalence: 28.8%
- 11% of deaths are attributed to CVD
- Increasing numbers of people living with HIV have CVD risk factors



Study Design: The HEART Study

- **Objective:** To assess the feasibility and acceptability of screening and managing CVDRF in HIV-infected patients 40 years and older receiving antiretroviral therapy (ART)
- **Setting:** Large urban hospital in Manzini, Swaziland
- **Phase One: Screening**
 - CVDRF screening conducted for patients on ART
- **Phase Two: Management**
 - Patients with CVDRF were randomized to management in ART clinic *vs.* outpatient department (OPD) for six months

Phase 1: Screening

Screening was offered to a non-random convenience sample of patients age ≥ 40 years attending ART visits at the HIV clinic from September 2015-June 2016

- **Inclusion Criteria:**

- HIV-infected
- Enrolled in HIV care and receiving ART
- Age ≥ 40 years

- **Exclusion Criteria:**

- Acutely ill
- Known history of CVD (self-report of CAD, MI, stroke)
- Currently pregnant (by self-report)

Methods:

CVDRF Definitions & Measurement

| CVD RF | Definition | Measurement |
|--------------------|-------------------------------------------------------|-----------------------------------------------------------|
| Hypertension (HTN) | SBP >140 and/or DBP >90 | Average of two resting BP measurements \geq 5 min apart |
| Diabetes (DM) | HBA1C>6.5% | Point of care testing |
| High Cholesterol | > 6.2mmol/L | Point of care testing |
| Smoking | Use of cigarette, cigar, and/or pipe in the last year | Self report |

Results

- During the study period patients on ART and ≥ 40 years old made 14,207 visits to ART clinic
- N =1,826 (13%) were screened
- On average, 43 patients were screened per week

Patient Characteristics among those screened:

| | Total | Age | | | | Sex | |
|----------------|-------|-------|-------|-------|-----|------|--------|
| Characteristic | | 40-49 | 50-59 | 60-69 | 70+ | Male | Female |
| Total, n | 1,826 | 1,121 | 462 | 206 | 36 | 701 | 1125 |
| (%) | (100) | (61) | (25) | (11) | (2) | (38) | (38) |

Results

Patient characteristics among those screened:

| Characteristic | Total | Age | | | | Sex | |
|---------------------------------------------------------|----------|----------|----------|----------|---------|----------|----------|
| | | 40-49 | 50-59 | 60-69 | 70+ | Male | Female |
| At least 1 CVD risk factor | 684 (39) | 340 (32) | 212 (47) | 112 (55) | 19 (54) | 302 (45) | 382 (35) |
| Hypertension (> 140/90 mmHg) | 451 (25) | 209 (19) | 141 (31) | 84 (41) | 17 (47) | 149 (21) | 302 (27) |
| Hypercholesterolemia (non-fasting TC > 6.2 mmol/L, POC) | 135 (8) | 60 (6) | 48 (11) | 22 (11) | 5 (14) | 37 (6) | 98 (9) |
| Diabetes (HbA1c > 6.5%, POC) | 90 (5) | 30 (3) | 37 (8) | 22 (11) | 1 (3) | 30 (4) | 60 (5) |
| Smoking in past year (self-report) | 170 (9) | 103 (9) | 47 (10) | 17 (8) | 2 (6) | 151 (22) | 19 (2) |
| Hypertensive emergency ¹ | 34 (2) | 12 (1) | 15 (3) | 5 (2) | 2 (6) | 11 (2) | 23 (2) |
| ≥ 10% 10-year CVD risk ² | 57 (3) | 13 (1) | 20 (4) | 21 (10) | 3 (8) | 22 (3) | 35 (3) |

ART: antiretroviral therapy; CVD: cardiovascular disease; HbA1c: glycated hemoglobin; POC: point-of-care; TC: total cholesterol

¹ Systolic BP >180mmHg or < 85mmHg, or diastolic BP > 110mmHg

² Predicted 10-year risk of a myocardial infarction or stroke, using WHO/ISH risk stratification tables

Limitations

- Non-random (purposive) sample
 - Limited to patients attending ART clinic at certain times of day
- The study was conducted in one clinic
 - Urban setting may not be representative of country as a whole

Conclusion

- 39% of PLWH \geq 40 years on ART at the study clinic have at least one modifiable CVDRF
- This is consistent with other studies
- Screening yields a large proportion of patients with diagnosed CVD RF.
- 2% of the patients screened had hypertensive emergencies
- Suggests that screening and management of CVDRF amongst PLWH can have a marked public health impact

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Thank you!