Acute Coronary Syndromes in Northern Saskatchewan: An overview of clinical characteristics and outcomes

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BACKGROUND

Acute Coronary Syndromes (ACS) result from acute myocardial ischemia either due to ST-Elevation Myocardial Infarction (STEMI) or Non-ST-Elevation Myocardial Infarction/Unstable Angina (NSTEMI/UA).

ACS associates with a significantly high risk for cardiac mortality, heart failure or shock due to acute myocardial ischemia or infarction

Due to improved medical therapy and revascularization, the outcomes of patients presenting with ACS have significantly improved.

However, care gaps and residual cardiovascular (CV) risk continue to persist. To target system-level initiatives aimed at improving ACS outcomes, an understanding of patient demographics and outcomes at each local systems level is required.

AIMS

We sought to characterize the clinical traits and outcomes of patients with ACS in Northern Saskatchewan. Our objectives were:

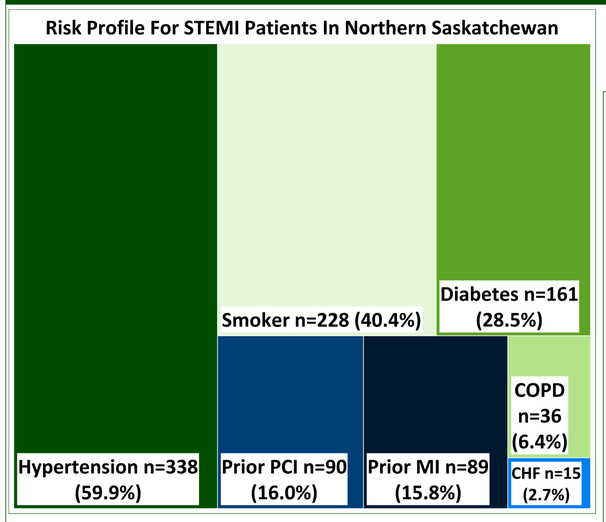
1. Identify typical patient demographics, risk factors, clinical characteristics and investigations, and outcomes.
2. Identify systemic and patient-level factors for improvement of patient care.

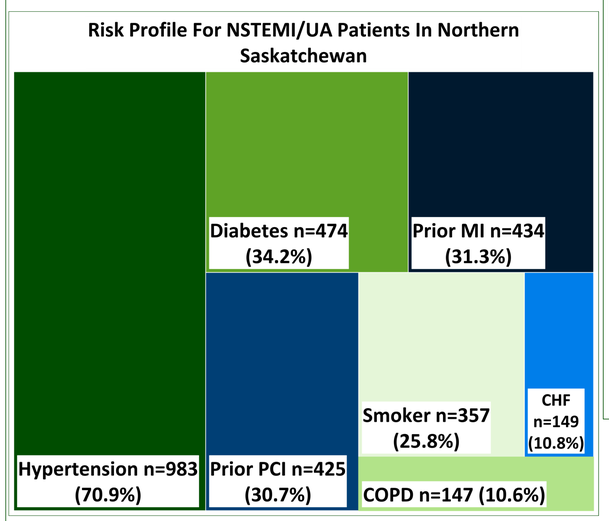
METHODS

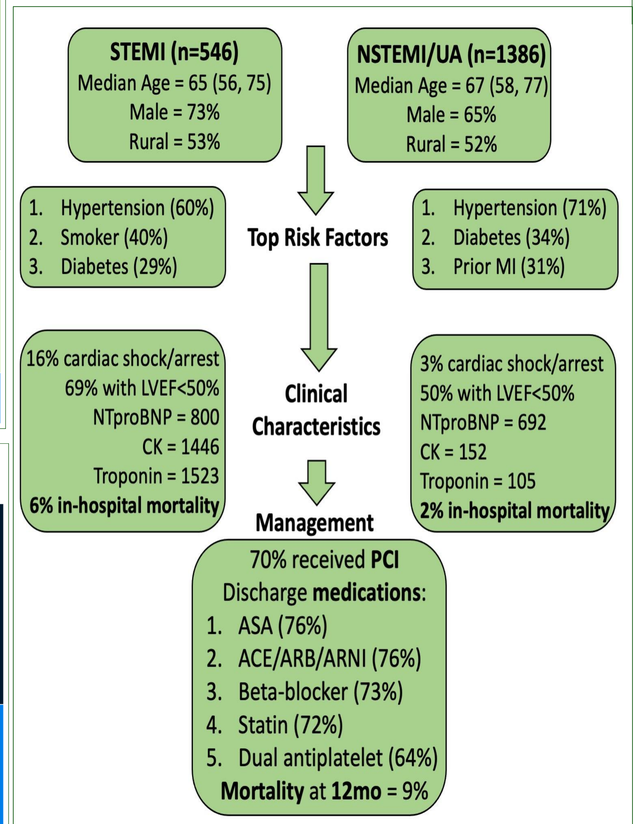
We prospectively evaluated consecutive ACS admissions (no exclusion criteria applied) at the Royal University Hospital, Saskatoon between March 15 2019 to March 31, 2021.

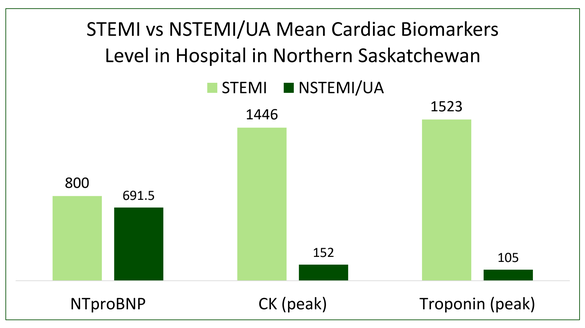
Categorized by STEMI or NSTEMI)/UA, we describe presenting demographics, in-hospital treatment pattern unadjusted all-cause mortality and all-cause rehospitalization at one-year.

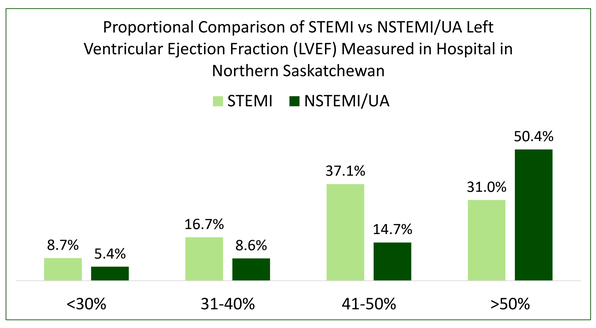
RESULTS

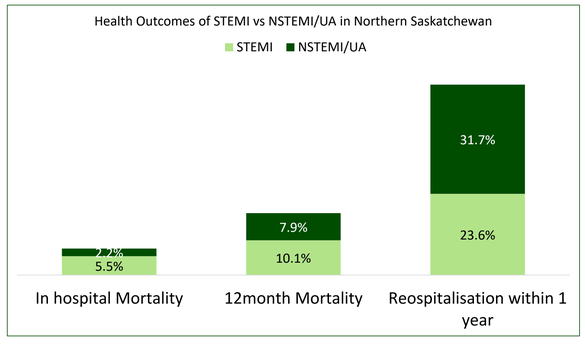


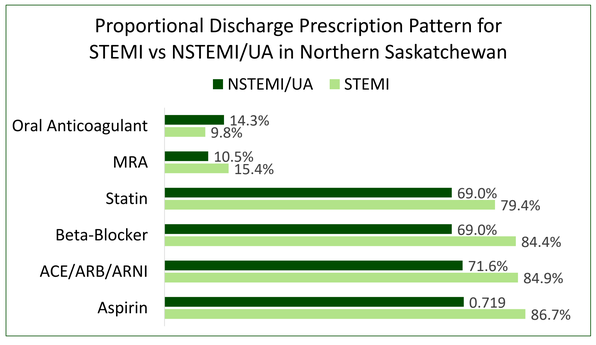












Systemic and Patient-Level Intervention

The results describe ACS patterns and presentations in Northern Saskatchewan, as well local differences across STEMI and NSTEMI/UA.

Notably, there is room for improvement with respect:

1. Chronic disease management, including patient education; in particular, hypertension, and diabetes,.
2. Promotion of healthy lifestyle, including exercise, weight reduction, smoking cessation and counselling.
3. Increased resource allocation for rural sites

FUTURE DIRECTIONS

1. To further evaluate the high rates of cardiogenic shock in STEMI, call for early recognition and integration of pre/in-hospital care in these high acuity patients

2. To investigate the 12-month mortality for NSTEMI/UA to see if it "catches up" with that for STEMI. This will inform aggressive secondary risk reduction in this highly comorbid ACS subgroup.

CONCLUSIONS

Half of all ACS in Northern Saskatchewan first present to a rural non-PCI capable center, with high rates of cardiac arrest and/or cardiogenic shock especially in STEMI.

However, despite the geographical diversity, the unadjusted in-hospital mortality rates for both STEMI and NSTEMI/UA appear comparable across Canada.

Aligned with contemporary ACS literature, nearly one in every ten Saskatchewan patients discharged following an ACS admission die within one-year. Our findings have identified various system- and patient-level factors at which improved care delivery could be applied to improve ACS outcomes in Saskatchewan.

ACKNOWLEDGEMENTS

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