**HOST RESPONSE MEDIATORS IN CORONAVIRUS (COVID-19) INFECTION –**

**IS THERE A PROTECTIVE EFFECT OF ANGIOTENSIN II TYPE 1 RECEPTOR BLOCKERS (ARBs)**

**ON OUTCOMES OF CORONAVIRUS INFECTION? (ARBs CORONA)**

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**FOR THE ARBS CORONA INVESTIGATORS**

SARS-CoV-2 is not only the story of one virus, but of a class of viruses: angiotensin converting enzyme2 (ACE2)-binding viruses that we call “ABVs”. WHO and others are performing RCTsof vaccines and novel antivirals. Complications of COVID-19 are caused in part by SARS-CoV2’s binding and inhibition of ACE2, which increases angiotensin II (ATII). *We complement vaccine and anti-viral RCTs with* ARBs CORONA II*, our multi-centre international RCT modulating the host response by using an angiotensin II type 1 receptor blocker (ARB, losartan) to decrease the mortality of 1372 hospitalized COVID-19 patients.*

* **Our primary hypothesis: losartan (25 to 50 mg daily) decreases mortality and is safe in hospitalized COVID-19-infected adults.**
* **Our secondary hypothesis: RAS peptide levels and metabolomics predict mortality and efficacy of losartan in hospitalized COVID-19-infected adults.**

ARBs block ATII and have additional anti-inflammatory, anti-coagulation, and permeability-protection actions. In influenza pneumonia models, ARBs decreased viral titre and lung injury.

In our CIHR-funded ARBs CORONA research program, we study acute heart and kidney injury and have an observational study (ARBs CORONA I) to determine *association* between use of ARBs and outcomes. We are now migrating to ARBs CORONA II, our RCT of losartan vs. usual care in COVID-19 to establish *causality*. Our inclusion criteria are hospitalized adults with COVID-19; exclusion criteria are hypotension, hyperkalemia, acute kidney injury and prior use of ARB or ACEi. To make our RCT patient-centred, we are establishing standardized COVID-19 clinical and laboratory follow-up at 1, 3 and 6 months post discharge.