**TOP 5 ARTICLES**

Director: Prof Charles Wiysonge

**Article:**

DOI: 10.1002/14651858.CD002003.pub5
Impact Factor: 6.103

**Summary:**

**Background:** Beta-blockers refer to a mixed group of drugs with diverse pharmacodynamic and pharmacokinetic properties. They have shown long-term beneficial effects on mortality and Cardiovascular Disease (CVD) when used in people with heart failure or acute myocardial infarction. Beta-blockers were thought to have similar beneficial effects when used as first-line therapy for hypertension. However, the benefit of beta-blockers as first-line therapy for hypertension without compelling indications is controversial. This review is an update of a Cochrane Review initially published in 2007 and updated in 2012.

**Objectives:** To assess the effects of beta-blockers on morbidity and mortality endpoints in adults with hypertension.

**Search Methods:** The Cochrane Hypertension Information Specialist searched the following databases for randomized controlled trials up to June 2016: the Cochrane Hypertension Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL) (2016, Issue 6), MEDLINE (from 1946), Embase (from 1974), and ClinicalTrials.gov. We checked reference lists of relevant reviews, and reference lists of studies potentially eligible for inclusion in this review, and also searched the World Health Organization International Clinical Trials Registry Platform on 06 July 2015.

**Selection Criteria:** Randomised controlled trials (RCTs) of at least one year of duration, which assessed the effects of beta-blockers compared to placebo or other drugs, as first-line therapy for hypertension, on mortality and morbidity in adults.
Article:

DOI: 10.1021/acs.jmedchem.6b01641
Impact Factor: 5.589

Summary:

Further Structure-Activity Relationship (SAR) studies on the recently identified pyrido[1,2-a]benzimidazole (PBI) antimalarials have led to the identification of potent, metabolically stable compounds with improved in vivo oral efficacy in the P. berghei mouse model and additional activity against parasite liver and gametocyte stages, making them potential candidates for preclinical development. Inhibition of hemozoin formation possibly contributes to the mechanism of action.
Summary:

Objectives: The widespread, chronic use of antiretroviral therapy raises questions concerning the metabolic consequences of HIV infection and treatment. Antiretroviral therapy, and specifically protease inhibitors, has been associated with hyperglycemia. As pregnant women are vulnerable to development of hyperglycemia, the objective of this study was to explore existing literature on the relationship between HIV infection, HIV treatment, and Gestational Diabetes Mellitus (GDM).

Methods: A systematic search was conducted in six databases for articles providing data on HIV-positivity, protease inhibitor exposure, and GDM or glucose intolerance development in pregnancy. The quality of articles was evaluated using an adapted Cochrane Collaboration bias assessment tool. Risk ratios were generated from pooled data using meta-analysis by the Mantel-Haenszel method.

Results: Of 891 references screened, six studies on the role of HIV-positivity, 10 on protease inhibitor use, and two on both were included. Meta-analysis showed no significant relationship between HIV infection and the development of GDM [risk ratio 0.80, 95% confidence interval (CI): 0.47-1.37, I=0%]. Meta-analysis of protease inhibitor exposure showed increased GDM in studies using first-generation protease inhibitors (risk ratio 2.29, 95% CI: 1.46-3.58) and studies using the strictest diagnosis criteria, the National Diabetes Data Group criteria for 3-h oral glucose tolerance test (risk ratio 3.81, 95% CI: 2.18-6.67).

Conclusion: Meta-analysis showed no significant association between HIV-positivity and GDM. Significance of protease inhibitor use was limited to studies using the strictest diagnostic criteria for GDM. Results are limited by high risk of bias. Well-designed prospective studies are needed to further clarify this relationship and its consequences for clinical practice.
Summary

Objectives: In 2010, South Africa reported an early Mother-To-Child Transmission (MTCT) rate of 3.5% at 4-8 weeks postpartum. Provincial early MTCT rates ranged from 1.4% [95% confidence interval (CI): 0.1 to 3.4] to 5.9% (95% CI: 3.8 to 8.0). We sought to determine reasons for these geographic differences in MTCT rates.

Methods: This study used multilevel modeling using 2010 South African Prevention Of Mother-To-Child Transmission (PMTCT) evaluation (SAPMTCTE) data from 530 facilities. Interview data and blood samples of infants were collected from 3085 mother-infant pairs at 4-8 weeks postpartum. Facility-level data on human resources, referral systems, linkages to care, and record keeping were collected through facility staff interviews. Provincial level data were gathered from publicly available data (e.g., health professionals per 10,000 population) or aggregated at province-level from the SAPMTCTE (PMTCT maternal-infant antiretroviral (ARV) coverage). Variance partition coefficients and odds ratios (for provincial facility- and individual-level factors influencing MTCT) from multilevel modeling are reported.

Results: The provincial- (5.0%) and facility-level (1.4%) variance partition coefficients showed no substantive geographic variation in early MTCT. In multivariable analysis accounting for the multilevel nature of the data, the following were associated with early MTCT: individual-level-low maternal-infant ARV uptake [adjusted odds ratio (AOR) = 2.5, 95% CI: 1.7 to 3.5], mixed breastfeeding (AOR = 1.9, 95% CI: 1.3 to 2.9) and maternal age <20 years (AOR 1.8, 95% CI: 1.1 to 3.0); facility-level-insufficient (≤2) health care-personnel for HIV-testing services (AOR = 1.8, 95% CI: 1.1 to 3.0); provincial-level PMTCT ARV (maternal-infant) coverage lower than 80% (AOR = 1.4, 95% CI: 1.1 to 1.9), and number of health professionals per 10,000 population (AOR = 0.99, 95% CI: 0.98 to 0.99).

Conclusions: There was no substantial province-/facility-level MTCT difference. This could be due to good overall performance in reducing early MTCT. Disparities in human resource allocation (including allocation of insufficient health care personnel for testing and care at facility level) and PMTCT coverage influenced overall PMTCT programme performance. These are long-standing systemic problems that impact quality of care.
Summary

**Background:** HIV transmission can be decreased substantially by reducing the burden of undiagnosed HIV infection and expanding early and consistent use of antiretroviral therapy (ART). Treatment as prevention (TasP) has been proposed as key to ending the HIV epidemic. To activate TasP in high prevalence countries, like South Africa, communities must be motivated to know their status, engage in care, and remain in care. Community mobilization (CM) has the potential to significantly increase uptake testing, linkage to and retention in care by addressing the primary social barriers to engagement with HIV care—including poor understanding of HIV care; fear and stigma associated with infection, clinic attendance and disclosure; lack of social support; and gender norms that deter men from accessing care.

**Methods/Design:** Using a cluster randomized trial design, we are implementing a 3-year-theory-based CM intervention and comparing gains in HIV testing, linkage, and retention in care among individuals residing in 8 intervention communities to that of individuals residing in 7 control communities. Eligible communities include 15 villages within a Health and Demographic Surveillance Site (HDSS) in rural Mpumalanga, South Africa, that were not exposed to previous CM efforts. CM activities conducted in the 8 intervention villages map onto six mobilization domains that comprise the key components for community mobilization around HIV prevention. To evaluate the intervention, we will link a clinic-based electronic clinical tracking system in all area clinics to the HDSS longitudinal census data, thus creating an open, population-based cohort with over 30,000 18-49-year-old residents. We will estimate the marginal effect of the intervention on individual outcomes using generalized estimating equations. In addition, we will evaluate CM processes by conducting baseline and endline surveys among a random sample of 1200 community residents at each time point to monitor intervention exposure and community level change using validated measures of CM.

**Discussion:** Given the known importance of community social factors with regard to uptake of testing and HIV care, and the lack of rigorously evaluated community-level interventions effective in improving testing uptake, linkage and retention, the proposed study will yield much needed data to understand the potential of CM to improve the prevention and care cascade. Further, our work in developing a CM framework and domain measures will permit validation of a CM conceptual framework and process, which should prove valuable for community programming in Africa.
1. **INTRAMURAL RESEARCH UNITS**

**Alcohol, Tobacco and Other Drug**

   
   DOI: 10.7196/SAMJ. 2017.v107i2.11331
   
   **Impact Factor: 1.500**

   
   DOI: 10.1007/s11845-016-1546-z
   
   **Impact Factor: 1.158**

**Biomedical Research and Innovation Platform**

1. **Dludla PV, Muller CJ, Joubert E, Louw J, Essop MF, Gabuza KB, Ghoor S, Huisamen B, Johnson R.** Aspalathin protects the heart against hyperglycemia-induced oxidative damage by up-regulating nrf2 expression. Molecules. 2017 Jan 14; 22(1): E129. [Original]
   
   DOI: 10.3390/molecules22010129
   
   **Impact Factor: 2.465**

   
   DOI: 10.3390/molecules22020219
   
   **Impact Factor: 2.465**

   
   DOI: 10.1111/1755-5922.12252
   
   **Impact Factor: 2.243**

   
   **Impact Factor: None**

   
   **Impact Factor: 0.226**

**Biostatistics**

   
   DOI: 10.1056/NEJMoa1604544
   
   **Impact Factor: 59.558**

   
   DOI: 10.1186/s12936-017-1701-7
   
   **Impact Factor: 3.079**
DOI: 10.1016/j.ejogrb.2017.01.014
Impact Factor: 1.662

DOI: 10.1111/insr.12206
Impact Factor: 1.789

Centre for Tuberculosis
DOI: 10.1186/s12917-016-0927-x
Impact Factor: 1.643

DOI: 10.1016/S2213-2600(16)30433-7
Impact Factor: 15.328

DOI: 10.1016/S1473-3099(16)30384-X
Impact Factor: 21.372

DOI: 10.1186/s12879-016-2158-y
Impact Factor: 2.690

DOI: 10.7589/2016-07-159
Impact Factor: 1.189

DOI: 10.1097/INF.0000000000001563
Impact Factor: 2.587
Environment and Health

   DOI: 10.1186/s12889-016-3966-0
   Impact Factor: 2.209

   DOI: 10.3390/ijerph14010043
   Impact Factor: 2.035

   DOI: 10.1186/s12889-016-3950-8
   Impact Factor: 2.209

   DOI: 10.7196/SAMJ.2017.v107i2.10837
   Impact Factor: 1.500

5. Wright CY, Albers PN, Reeder AI, Mathee A. Sunbeds and skin cancer risk: quantifying a baseline estimate of sunbed facilities in South Africa prior to implementation of sunbed regulations. Pan African Medical Journal. 2017 Jan-Apr; 26: 188. [Original]
   DOI: 10.11604/pamj.2017.26.188.10176
   Impact Factor: None

Gender and Health

   DOI: 104102/sajpsychiatryv23i1959 [Original]
   Impact Factor: 0.193

   DOI: 10.1177/1097184X17696173
   Impact Factor: 1.250

   DOI: 10.1186/s12889-016-3909-9
   Impact Factor: 2.209

Health Systems

   DOI: 10.1017/S2045796016001207
   Impact Factor: 2.847
   DOI: 10.1186/s12960-016-0178-8  
   Impact Factor: 2.416

   DOI: 10.1097/QAI.00000000000001289  
   Impact Factor: 3.806

HIV Prevention

   DOI: 10.1016/S2352-3018(16)30209-0  
   Impact Factor: 8.364

   DOI: 10.1007/s10461-017-1685-x  
   Impact Factor: 3.063

MRC Office of Tuberculosis

   DOI: 10.1038/ng.3767  
   Impact Factor: 31.616

Non-Communicable Disease

   DOI: 10.1186/s40608-016-0139-8  
   Impact Factor: None

   DOI: 10.1038/srep40329  
   Impact Factor: 5.228

   DOI: 10.1136/bmjopen-2016-013538  
   Impact Factor: 2.562
Impact Factor: 2.833

Impact Factor: 1.570

Impact Factor: None

Impact Factor: None

Impact Factor: None

South African Cochrane Centre
Impact Factor: 1.500

Impact Factor: 6.103

Violence, Injury and Peace
Impact Factor: 0.888
2. EXTRAMURAL RESEARCH UNITS

Anxiety and Stress Disorders

   DOI: 10.1002/pmic.201600236
   Impact Factor: 4.079

   DOI: 10.1186/s12888-017-1196-3
   Impact Factor: 2.576

   DOI: 10.1016/j.jad.2017.01.004
   Impact Factor: 3.570

   DOI: 10.1089/brain.2016.0457
   Impact Factor: None

   DOI: 10.1007/s12325-016-0468-5
   Impact Factor: 2.503

   DOI: 10.1371/journal.pone.0169575
   Impact Factor: 3.057

   DOI: 10.1001/jamapsychiatry.2016.3783
   Impact Factor: 14.417
Developmental Pathways for Health
   DOI: 10.1097/QAD.0000000000001277
   Impact Factor: 4.407

   DOI: 10.1016/j.bone.2017.01.026
   Impact Factor: 3.736

   DOI: 10.1155/2017/5283457
   Impact Factor: 2.134

Drug Discovery and Development
   DOI: 10.1021/acs.jmedchem.6b01641
   Impact Factor: 5.589

   DOI: 10.1016/j.bmc.2017.01.035
   Impact Factor: 2.923

Hypertension and Cardiovascular Disease
   DOI: 10.1097/HJH.0000000000001267
   Impact Factor: 5.062

   DOI: 10.1001/jama.2016.19043
   Impact Factor: 37.684
Impact Factor: 3.759

Maternal and Infant Health Care Strategies
Impact Factor: 0.538

Prospective Gastrointestinal Cancer
Impact Factor: 1.500

Respiratory and Meningal Pathogens
Impact Factor: 2.147
Impact Factor: 2.133
Impact Factor: 2.587

Rural Public Health and Health Transition
Impact Factor: 3.201
Impact Factor: 0.424
**Impact Factor:** None

**Impact Factor:** None

**Impact Factor:** 1.500

**GRANT FUNDED RESEARCH**

**Impact Factor:** 3.413

**Impact Factor:** 2.180

**Impact Factor:** 0.543

**Impact Factor:** 3.002

**Impact Factor:** 2.896

**Impact Factor:** 2.397
**Impact Factor: 2.645**

**Impact Factor: 3.015**

**Impact Factor: 1.674**

**Impact Factor: 9.542**

**Impact Factor: 7.003**

**Impact Factor: 2.235**

**Impact Factor: 3.057**

**Impact Factor: 1.353**

**Impact Factor: 3.201**
4. RESEARCH CENTRES

Soweto Matlosana SAMRC Collaborating Centre for HIV/AIDS and TB

1. Paximadis M, Ngqobe RN, Chaisson RE, **Martinson NA**, Tiemessen CT. RICH2 is implicated in viraemic control of HIV-1 in black South African individuals. Infection, Genetics and Evolution. 2017 Jan 06. [Original]
   DOI: 10.1016/j.meegid.2017.01.007
   **Impact Factor:** 2.591

5. RESEARCH UNITS WITH NO QUALIFYING PUBLICATIONS

Intramural
- Burden of Disease
- MRC Office of AIDS
- MRC Office of Cancer
- MRC Office of Malaria
- Primate

Extramural
- Antiviral Gene Therapy
- Bioinformatics Capacity Development
- Child and Adolescent Lung Health
- Common Epithelial Cancer
- Diarrhoeal Pathogens
- Gynaecological Cancer
- Health Services to Systems
- Herbal Drugs
- HIV/TB Pathogenesis and Treatment
- Human Genetics
- Immunology of Infectious Disease
- Medical Imaging
- Microbial Water Quality Monitoring
- Molecular Mycobacteriology
- Receptor Biology
6. **GRANTS AWARDED**

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<td>Health Systems</td>
<td>The University of Kwazulu-Natal</td>
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<td>Task sharing mental services within HIV care in South Africa</td>
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