

1 **Timing of onset and severity of pre-eclampsia in HIV positive pregnant women**
2 **on antiretroviral therapy compared to HIV negative pregnant women**
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15 This research report is submitted to the University of the Witwatersrand Health
16 Science faculty for the degree of the Masters of medicine in Obstetrics and
17 Gynaecology in August 2020
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23 **Table of contents**

24		
25	<u>Abstract</u>	<u>2</u>
26		
27	<u>Ethics clearance certificate</u>	<u>3</u>
28		
29	<u>Plagiarism declaration</u>	<u>4</u>
30		
31	<u>List of corrections</u>	<u>5</u>
32		
33	<u>Change of sample size</u>	<u>6</u>
34		
35		
36		
37		

Abstract

Background: The association between pre-eclampsia, HIV infection and antiretroviral therapy (ART) is poorly understood. Little is known about the timing of onset and severity of disease in HIV-positive patients on ART.

Objective: To compare the timing of onset and severity of pre-eclampsia amongst HIV-positive pregnant patients on ART and HIV-negative pregnant patients. Secondary outcomes included maternal and neonatal outcomes.

Methods: A retrospective record review of patients with pre-eclampsia who delivered at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) between 1 July and 31 December of 2017 was done.

Results: Of the 100 patients enrolled in the study, 79% were HIV-negative and 21% were HIV-positive. HIV-positive patients had an earlier gestational age of onset of pre-eclampsia, 30 ± 5 weeks vs. 32.5 ± 4.9 weeks ($p < 0.05$), and consequently an earlier gestation at delivery compared to HIV-negative patients, 31.3 ± 4.5 weeks vs. 34 ± 4.9 weeks ($p < 0.05$). The incidence of severe pre-eclampsia was similar in the two groups with a odds ratio (OR) of 1.08 (95% confidence interval (CI) 0.38 - 3). There was no difference in maternal outcomes, but neonatal outcomes were poorer in the HIV-positive group with fewer live births with an OR of 0.24 (CI 0.06 - 0.86), and more intrauterine fetal deaths with an OR of 7.92 (CI 1.57 - 39.67).


Conclusion: In this study, HIV-positive pregnant patients on ART had earlier onset of pre-eclampsia. There was no statistical difference in severity of disease and maternal outcomes but HIV-positive patients had poorer neonatal outcomes. Further studies are needed to confirm these findings.



R14/49 Dr Ine Small-Smith

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M180831

NAME: Dr Ine Small-Smith
(Principal Investigator)
DEPARTMENT: Obstetrics and Gynaecology
Charlotte Maxeke Johannesburg Academic Hospital
PROJECT TITLE: Timing of onset and severity of pre-eclampsia in HIV positive pregnant women on antiretroviral therapy compared to HIV negative pregnant women
DATE CONSIDERED: 31/08/2018
DECISION: Approved Unconditionally
CONDITIONS:
SUPERVISOR: Coceka Mnyeni
APPROVED BY: 
Doctor CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL: 22/10/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **August** and will therefore be due in the month of **August** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

10.08.2019

Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Plagiarism declaration



PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Ine Small-Smith (Student number: 302826) am a student registered for the degree of Masters of Medicine in Obstetrics and gynaecology in the academic year 2021.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature: 

Date: 24.08.21

List of corrections

Examiner 1

	Recommendation	Corrections made	Page and Paragraph/Table
1	Sample size calculation	The proposed sample size from my protocol was found to be difficult to achieve due to time constraints, and the application to reduce my sample size was granted by the Department of Obstetrics and Gynaecology research coordinator.	Communication attached
2	Fetal outcomes Table 2	The fetal outcomes are presented in Table 4 and have been confirmed	Pg 7 Table 4
3	Explanation of why delivery occurred earlier even though disease was not more severe	Indication for deliveries were not analysed	

Examiner 2

	Recommendation	Corrections made	Page and Paragraph/Table
1	Correction to references	Editing and punctuation Into 91 – 98 266 – 268 RF 3 authors et al. Kalumba VM, Rolnik D,	Pg 12 line 4 Pg 12 line 14 Pg 12 line 23 Pg 13 line 11 Pg 12 line 31 Pg 13 line 8 Pg 12 line 20
2	Change list of figures and tables	This has been changed to 'List of tables'	Pg viii Line 17
3	Authors guidelines from SAJOG attached as appendix	Guidelines attached	Pg 44
4	Spelling of hypothesized	Hypothesized	Pg 1 Line 25
5	Capitalise the word 'hospital'	Hospital	Pg 6 line 10
6	'Variables were described... add full stop after SD	variables were described using means and standard deviations (SD).	Pg 2 line 2
7	VL did not add up	Unknown VL = 2	Pg 5 table 2
8	Grammar – 'Neonatal outcomes is'	Neonatal outcomes are	Pg 10 line 11
9	This was A retrospective study	A retrospective record review was done	Pg 1 line 14
10	Permission documents and data sheets attached in appendix	Letter from the CMJAH CEO and data collection tool from protocol attached	Page 34 Page 39

Change of sample size



OBSTETRICS AND GYNAECOLOGY
School of Clinical Medicine

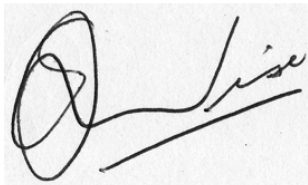
29 July 2019

Dear Dr Small- Smith

Thank you for the letter regarding your sample size in your ~~MMed~~ study 'The timing of onset and severity of pre eclampsia in HIV positive pregnant women on ART compared to HIV negative pregnant women'.

I agree that reaching a sample size of 100 included patients will be sufficient and demonstrate an understanding of the research process, and agree that your protocol can reflect an amendment to that effect.

Kind regards

A handwritten signature in black ink, appearing to read 'Amy Wise', with a large, stylized initial 'A'.

Dr Amy Wise

Research Co-ordinator, ~~Obstetrics and Gynaecology~~

~~University of the Witwatersrand~~