The XXI International Society of Hypertension in Pregnancy meeting, São Paulo, Brazil – A global health perspective

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Abstract

The 21st International Society of Hypertension in Pregnancy (ISSHP) meeting was held in São Paulo, Brazil from 23 to 26 October 2016. The discourse at this Congress brought global maternal health into the foray among basic science and clinical research. In concordance with the United Nations sustainable development goals which warrant an integrated view to health with investments in adolescence and childhood, the research at Congress focussed on a 'life course' approach to maternal health – examining intergenerational effects of maternal obesity and hypertension on the behavioral and physical developments of infants. Bringing in research from the Global South highlighted inequities in treatment and management of women with hypertensive disorders of pregnancy, in addition to the challenges in adoption of recommendations generated in Global North. The evidence shared can serve as platform for further discourse on global maternal health and in generating accountability to close the 'evidence to policy' gap.

Keywords

Global health, maternal mortality, ISSHP

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The 21st International Society of Hypertension in Pregnancy (ISSHP) meeting was held in São Paulo, Brazil from 23 to 26 October 2016. The meeting brought together 350 participants from 10 countries. It was fitting for this community of clinician scientists, basic science researchers, allied maternal health professionals, advocacy groups, and governmental organizations to meet in Brazil. Here, the maternal mortality ratio (MMR) of 30–100/100,000 live births remains above that in high-income countries (<30/100,000 live births), and hypertension remains a leading cause, in addition to both indirect and late causes of maternal death, that are of additional interest to obstetric medicine.¹ Also, this was the ISSHP's first World Congress since the global community took stock of the Millennium Development Goal 5A, to reduce maternal mortality by 75% from 1990 levels, by 2015. Although the goal was not achieved in full, substantial reduction in MMR was achieved – a 45% reduction worldwide.

The sustainable development goals

Stating only one explicit goal for health among its 17 sustainable development goals (SDGs), the United Nations has confirmed that improvements in health cannot be achieved in isolation. Rather, there is an inextricable link between improvements in health and wellbeing and each of the other 16 aspirational SDGs, such as those targeting poverty, hunger, and gender equality.² This need for integrated action was addressed in the opening ceremony by Peter von Dadelszen, who highlighted that global burden of maternal health reflected inequity in human rights and showcased how steps towards promoting gender equity, reproductive health rights, nutrition and education of girls can avert maternal deaths and illness among vulnerable populations.

This message of inequity was re-iterated in the opening ceremony by Shuchita Mundle, who presented the 'ecology of eclampsia' for women in Maharashtra, India. Dr. Mundle emphasized that the poor awareness of eclampsia in this population was a common barrier to accessing timely care. Dr. Mundle was the recipient of the inaugural 2014 EMPOWER (Empowering Progress in Obstetric and Women's hEalth Research) grant, a program designed to begin to address inequity in research by providing funding and mentorship between

experienced individuals and groups in under-resourced settings. EMPOWER is a collaboration of the International Society for the Study of Hypertension in Pregnancy, the Preeclampsia Foundation, PRE-EMPT/Global Pregnancy Collaboration, and New Zealand Action on Pre-eclampsia. It was telling that Dr. Mundle found, just as in high-income settings, that women lack sufficient information about the hypertensive disorders of pregnancy to minimize risk and optimize outcomes. Further evidence of how misconceptions and myths serve as barriers to effective early case detection and treatment were illustrated by the results of studies of attitudes and knowledge of pre-eclampsia and eclampsia by women and men in Nigeria³ and Bangladesh.⁴

Highlighting inequities in treatment and management

Blood pressure measurement and treatment. In a landscape analysis of 96 primary health and secondary-level facilities in Nigeria, Gloria Adoyi showed that most (approximately 70%) health facilities lacked essential commodities for detection (e.g. blood pressure (BP) machines) and management (e.g. antihypertensive therapy) of the hypertensive disorders of pregnancy, a leading cause of death in Nigeria.⁵ Yet, in a secondary analysis of BP values from the CHIPS Trial, Laura Magee showed that higher BP is a biomarker for adverse maternal outcomes, regardless of BP goal, and that these women and their babies warrant enhanced surveillance.⁶

Considered together, the findings from both studies have compelling programmatic and policy implications. Evidence must serve as a key mechanism for generating accountability.

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Caesarean delivery. The rates of Caesarean delivery reflect a stark disparity in medicalization globally. In 2010, it was estimated that 3.5–5.7 million unnecessary Caesareans were performed in high- and middle-income countries, whereas 1–3.5 million indicated Caesareans did not take place in low-income countries.⁷ This issue is one of particular relevance in Latin America and Brazil in particular, where over 40% and 57% of deliveries are by Caesarean, respectively.⁷ A Brazilian national cross-sectional study demonstrated that Caesareans represent the norm in hypertensive pregnancy – 72.9% of 23,894 hypertensive women included; this was particularly striking when one considers that the rate of preterm birth was 20.9% overall. The authors concluded that, “*Caesarean section rates for women with hypertensive disorders is abusive...especially in private facilities where more resources are available*.”⁸

While optimal Caesarean section rates can be generated for health facilities using the WHO ‘C-tool’,⁹ this tool is not applicable at the individual level. In a Brazilian study of 28 women with pre-eclampsia who delivered preterm, the 10 women determined retrospectively to be at ‘low’ risk (>1% PIERS risk range) of adverse maternal outcome were delivered earlier and more often by Caesarean, compared with similar women in high-income countries;¹⁰ the fullPIERS model (Pre-eclampsia Integrated Estimate of RiSk) score was used for determination of maternal risk.¹¹ In a stepped-wedge randomised trial that is just being launched in Brazil (PrePARE Study¹²), investigators are studying how to lower Caesarean rates by evidence-based management according to application of World Health Organization guidelines for all women, and then further risk stratification of women with suspected pre-eclampsia using the fullPIERS model¹¹ and placental growth factor measurement.¹³

Quality and providers of care

In a panel presentation, Charlotte Warren (of Ending Eclampsia, Population Council, USA) brought a patient-centered perspective to the audience. Dr. Warren highlighted a lack of respectful maternity care, especially in resource-constrained settings. Other studies highlighted that women who have experienced hypertension in pregnancy are more likely to report that their birthing experience was ‘traumatic’, and that ‘trust’ and ‘continuity of care’ served as important mediator variables in improving their perceived quality of care.¹⁴ To address these gaps and provide quality maternal healthcare will require investment in the health workforce. Of 379 maternal health providers from 96 healthcare facilities across Nigeria, only 56.9% of doctors and 70% of nurses and midwives could identify signs and symptoms of pre-eclampsia.¹⁵ In 29 primary healthcare centres in Ogun State, Nigeria,¹⁶ 170 community-based health providers were able to safely and effectively provide treatment for pre-eclampsia and eclampsia; there were no cases of hematoma or infection following 137 intramuscular magnesium sulphate injections for pre-eclampsia. In settings where the majority of preventable maternal deaths are a function of delays in triage, treatment, and transport to facility, these findings bring imperatives for optimising health worker roles and for generating recommendations for task sharing.

Integrated solutions

The new United Nations ‘Global Strategy’, calls for integrated solutions to achieve the highest state of health for mothers, newborns, and adolescents.¹⁷ These solutions mandate research that integrates maternal, newborn, child, and adolescent health. However, research focussed on the hypertensive disorders in pregnancy does not necessarily include key outcomes required. In a systematic review of 79 randomised trials of therapeutic approaches for pre-eclampsia, James N Duffy highlighted important gaps. Only 23 (29.1%) trials reported neonatal outcomes, and fewer than half contained any relevant information regarding harm, for mother, newborn, or child.¹⁸ This work is fueling

a Delphi consensus process on the topic – iHOPE (International Collaboration to Harmonise Outcomes for Pre-Eclampsia, <https://www.phc.ox.ac.uk/research/hypertension/pregnancy/ihope-collaboration-outcomes-preeclampsia-pregnancy>).¹⁹

At the Congress, however, there was active discussion of perinatal mortality and morbidity, as well as childhood development. They highlight the need for studies on causality and underlying mechanisms to mitigate the intergenerational effect of pregnancy hypertension. Presentations were made that related antenatal hypertension with elevated risks of autism spectrum disorder,²⁰ largely reassuring data about developmental programming of growth and the hypothalamic–pituitary–adrenal axis following hypertensive pregnancy,^{21,22} and behavioral and physical development of infants in the P4 study.²³

The significance of the investigating in the life course approach to maternal health was addressed.

In his state-of-the-art lecture, entitled ‘Life course approach to obesity prevention; the importance of pre-conception and maternal periods’ Mark Hanson emphasized the life course approach – a method that examines people’s lives within structural, social, and cultural contexts as these aspects are all powerfully interconnected. Maternal obesity is associated not only with the perinatal complications and long-term maternal complications that are usually discussed at medical meetings but also with elevated risks of offspring obesity, coronary heart disease, stroke, type 2 diabetes mellitus, and asthma. Hanson emphasized that a ‘whole-of-society intervention approach’ will be required to address the cascade of events that are related to maternal obesity.

Focussed harmonization with the Global South

The Joint ISSHP and ISOM Global Health Committee held a global health symposium with the aim of engaging the delegates, identifying needs, and discussing the Committee’s role in promoting best clinical, research, and advocacy practices in under-resourced settings. Three key directions emerged from this session: (1) providing support and training for emergency obstetric care; (2) increasing access to the existing evidence base; and (3) strengthening capacity for robust basic science research, particularly to understand the pathophysiology of pre-eclampsia in diverse populations. The need for the latter was further illustrated by a study of placental disorders and fetal aneuploidies in 398 Ghanaian women, demonstrating differences in biomarker levels (placental growth factor and pregnancy-associated plasma protein-A), observed to be substantially higher in the sub-Saharan African populations, compared with Caucasian or Afro-Caribbean populations; the latter are currently used for screening purposes.²⁴

Another step towards addressing inequity in research was taken when the 2016 EMPOWER grant awardee was announced to be Dr. Sarah Manyame, a physician-researcher with the Department of Obstetrics and Gynaecology at the University of Zimbabwe Parirevatwa Group of Hospitals. She was awarded \$60,000 USD for her two-year project, ‘Urine Biomarkers for Preeclampsia in High Risk Women’; the results will be presented at the 2018 ISSHP conference in Amsterdam.

Future recommendations

More than ever before, the 21st World Congress of the ISSHP showcased global maternal health, one of the key ‘seven steps’ laid out by the agenda of the President, Professor Mark Brown. Ongoing threats to global maternal health such as posed by Zika virus, or internal displacements due to conflicts in fragile and conflict states, have shown that global momentum towards maternal health is vulnerable to shocks, and that progress can only be made by strengthening health systems and building resilience, within clinical and research communities. There is a particular need for an engaged community, interested

in knowledge brokering and translation, a role that ISSHP and ISOM should lead in their in order to address the global epidemiological transition towards later and indirect causes of maternal death. When asked, please give of your expertise and share your views, freely.

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References

1. Kassebaum NJ, Betrozzi-Villa A, Coggeshall MS, et al. Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2014; 284: 980–1004.
2. United Nations. Sustainable development goals, www.un.org/sustainabledevelopment/sustainable-development-goals/ (2015, accessed 2 November 2016).
3. Adoyi G, Ishaku SM, Babatunde OA, et al. A comparative study of knowledge, attitudes and perceptions of women and men around pre-eclampsia and eclampsia in Nigeria. *Pregnancy Hypertens* 2016; 6: 169.
4. Kanij S, Nur R and Hossain S. Community perceptions of hypertensive disorders of pregnancy, health-seeking behaviors and pathways to seeking care in Bangladesh: preeclampsia in low and middle income countries. *Pregnancy Hypertens* 2016; 6: 196.
5. Adoyi G, Ishaku MS, Babatunde OA, et al. Persisting challenges in the provision of quality obstetric care to women with pre-eclampsia and eclampsia in Nigeria: assessment of health providers' preparedness and facility readiness: Prevention of preeclampsia. *Pregnancy Hypertens* 2016; 6: 158.
6. Magee LA, von Dadelszen P and Ganzevoort W for the CHIPS Study Group. Is BP level achieved related to maternal and perinatal outcomes? A secondary analysis of BP values from the CHIPS (Control of Hypertension in Pregnancy Study) randomised controlled trial. *Pregnancy Hypertens* 2016; 6: 138.
7. Miller SE, Abalos E, Chamillard M, et al. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *Lancet* 2016; 388: 2176–2192.
8. Maia LK, Da Gama SGN, Pereira MN, et al. Analysis of obstetric care during delivery in hypertensive women in Brazil: "WHO" and millennium goals. *Pregnancy Hypertens* 2016; 6: 224.
9. Souza J, Betran A, Dumont A, et al. A global reference for caesarean section rates (C-Model): a multicountry cross-sectional study. *BJOG* 2015; 123: 427–436.
10. Oliveira L, Legramandi O, Peraçoli JC, et al. Fullpiers application on the Brazilian practice – a first look shows the need for cultural change within the obstetric workforce: management of preeclampsia, delivery. *Pregnancy Hypertens* 2016; 6: 204–206.
11. von Dadelszen P, Payne B, Li J, et al. Prediction of adverse maternal outcomes in pre-eclampsia: development and validation of the fullPIERS model. *Lancet* 2011; 377: 219–227.
12. Global Grand Challenges. PrePARE – preterm birth reduction by improvements in the quality of care to patients with preeclampsia, <http://gcgh.grandchallenges.org/grant/prepare-preterm-birth-reduction-improvements-quality-care-patients-preeclampsia> (2015, accessed 13 December 2016).
13. Duckworth S, Chappell LC, Griffin M, et al. Plasma Placental Growth Factor (PlGF) in the diagnosis of women with pre-eclampsia requiring delivery within 14 days: the PELICAN study. *BJOG* 2013; 120: E1–E2.
14. Davis GK, Roberts L, Harvey SB, et al. Hypertension in pregnancy: gaining insight into women's mental health and birth experience 6–12 months postpartum. *Pregnancy Hypertens* 2016; 6: 164.
15. Ishaku SM, Ismail SM, Adoyi G, et al. Knowledge and practices for the prevention of pre-eclampsia (PE) among frontline health care providers in Bangladesh and Nigeria: a call for action: prevention of preeclampsia. *Pregnancy Hypertens* 2016; 6: 219–220.
16. Adepoju AA, Vidler M, Jaibesimi E, et al. The ability and safety of community-based health workers to initiate lifesaving therapies for pre-eclampsia in Ogun State, Nigeria: an analysis of 294 community treatments with MGSO4 and/or methyldopa: preeclampsia in low and middle income countries. *Pregnancy Hypertens* 2016; 6: 185.
17. Every Woman Every Child. Global Strategy for Women's, Children's and Adolescent's Health 2016–2030, www.who.int/life-course/partners/global-strategy/global-strategy-2016-2030/en/ (2015, accessed 2 November 2016).
18. Duffy JMN, Hirsch M, Kawsar A, et al. Completeness of outcome and outcome measure reporting across seventy-nine randomised trials, 31,615 participants, evaluating therapeutic interventions for pre-eclampsia: a systematic review. *Pregnancy Hypertens* 2016; 6: 148.
19. Duffy JMN, van 't Hooft J, Gale C, et al. A protocol for developing, disseminating, and implementing a core outcome set for pre-eclampsia. *Pregnancy Hypertens* 2016; 6: 274–278.
20. Curran EA, Khashan AS, O'Keeffe GW, et al. Hypertension in pregnancy and autism spectrum disorder in a British cohort: long term consequences for mother and child. *Pregnancy Hypertens* 2016; 6: 153.
21. Magee LA, Synnes A, von Dadelszen P, et al on behalf of CHIPS-CHILD Working Grp. CHIPS-Child: testing the developmental programming hypothesis in the offspring of the CHIPS trial: randomized trials. *Pregnancy Hypertens* 2016; 6: 143.
22. Davis GK, Roberts L, Craig M, et al. Physical and developmental health six months postpartum in infants of women with a normotensive versus hypertensive pregnancy. *Pregnancy Hypertens* 2016; 6: 248–249.
23. Davis GK, Roberts L, Henry A, et al. Postpartum physiology and paediatric study-P4 study. *Pregnancy Hypertens* 2016; 6: 216–217.
24. Browne JL, Klipstein-Grobusch K, Koster MPH, et al. Pregnancy associated plasma protein-A and placental growth factor in a sub-Saharan African population: a nested cross-sectional study: risk factors, and prediction of preeclampsia. *Pregnancy Hypertens* 2016; 6: 172–173.