

Claire Bertorelli 2, Luke C. Davies<sup>1,5</sup>, Simran Sharma<sup>2,1</sup>, Patrícia R. S. Rodrigues<sup>1</sup>, Sarah Edkins<sup>1</sup>, Angela Strang<sup>1</sup>, Freya Shepherd<sup>1</sup>, Shaun Oram<sup>4</sup>, Kate Siddall<sup>2</sup>, Vikki Keeping<sup>2</sup>, Kathryn Simpson<sup>4</sup>, Federica Faggian<sup>3</sup>, Maryanne Bray<sup>2</sup>, Sarah Bell<sup>1,4</sup>, Rachel Collis<sup>1,4</sup>, James E. McLaren<sup>1</sup>, Summia Zaher<sup>1,2</sup> and Peter Ghazal<sup>1</sup>

1: I&I, Cardiff University, 2: Department of Obstetrics & Gynaecology, UHW. 3: Department of Microbiology, UHW. 4: Department of Anaesthesia and Critical Care, UHW. 5: Biomedical Science, Swansea University.

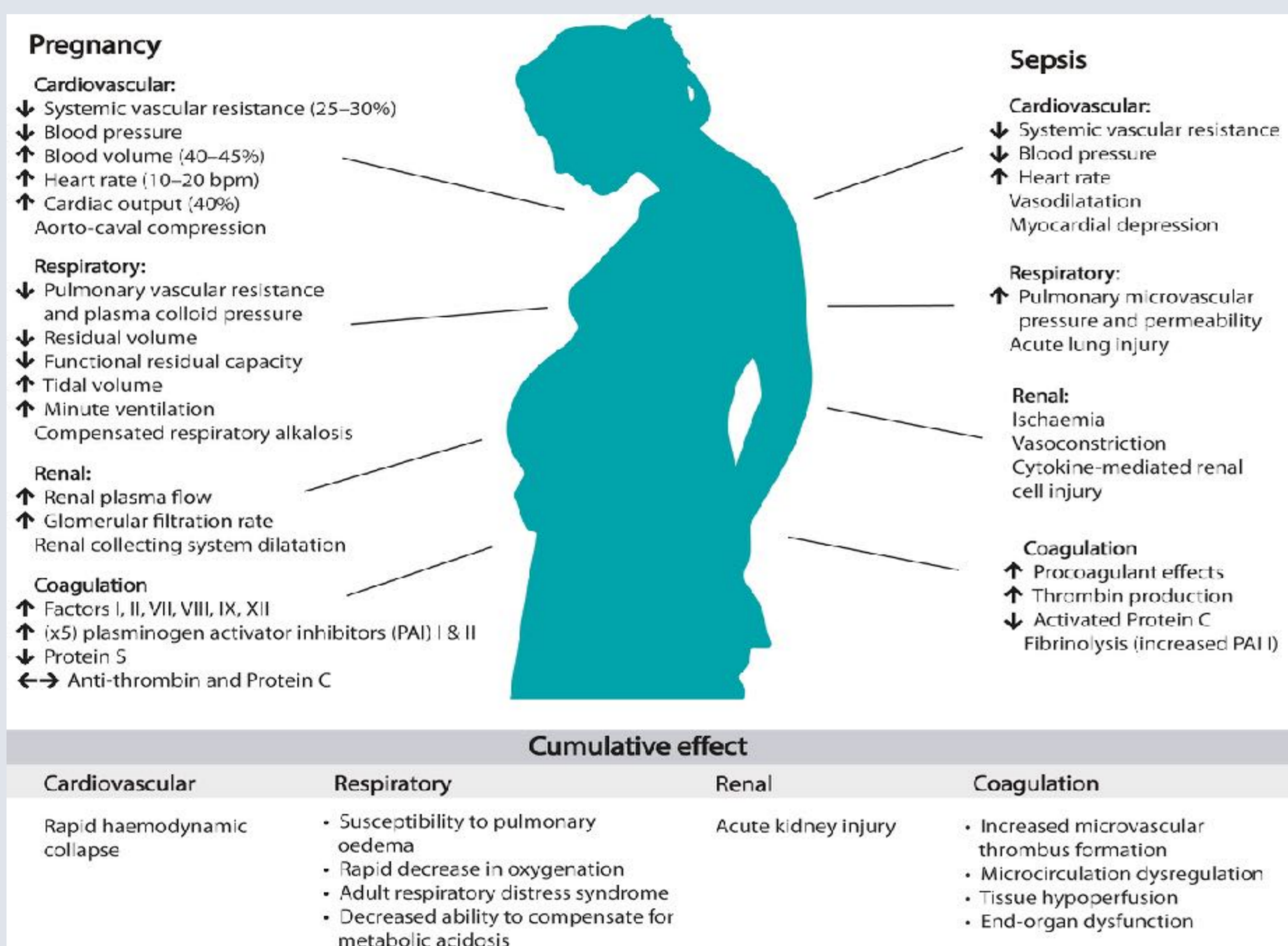
## INTRODUCTION

- Globally pregnancy related infections leading to sepsis are the third most common cause of maternal death.
- Sepsis can lead to morbidity, worse fetal outcomes and maternal death.
- Physiological shifts during pregnancy do not increase the incidence of infection but predispose women to a higher risk of developing sepsis to infection, resulting from a maladapted host response to infection.
- Studies have shown subtle point changes to the immune system during pregnancy. See appendix below: REF: Maternal Sepsis Management.

## METHODS-STUDY DESIGN MSEP

- m-SEP: Is an in house collaborative study with Cardiff University and the University Hospital of Wales.
- Maternal Sepsis is a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or the post-partum period.
- The objectives of our study are to evaluate the effectiveness of physiological parameters in predicting maternal sepsis and the effectiveness of alternative biomarkers in diagnosing maternal sepsis, including a genomic sepsis-test. We will also be investigating the systemic immune health of women undergoing an uncomplicated pregnancy and labour.
- The altered physiology of pregnancy makes the signs and symptoms of sepsis less distinctive in the pregnant population. This can lead to both over treatment and late identification of sepsis.
- A review of the literature shows that half of the fatal cases could have been prevented.

## ALTERED PHYSIOLOGY IN PREGNANCY



## PRELIMINARY FINDINGS (AWAITING CLINICAL)

- A trend with physiological parameters and confirmed histopathological chorioamnionitis.
- The main triggers on the maternal sepsis pathway, that correspond with a positive microbiological finding, seems to be fetal heart rate changes
- The addition of fetal heart rate as a parameter is a recent change on the local sepsis pathway and is not universal practice throughout the UK.
- This study can lead to changes in service and practice development.

## FUTURE DIRECTIONS

- Future Research opportunities.
- Maternal sepsis workshops.
- Future publications.
- Proposed Qualitative sub-project of the study.

## PRELIMINARY CONCLUSIONS

- The study challenges the clinical dogma of immune suppression in pregnancy.
- Evaluating immune set points and cell changes in pregnancy, asking the question if these changes act as a stepping stone to sepsis. See published review article below.

### References:

