

## Preface

Miscarriage is a common complication of pregnancy with 25% of women experiencing a miscarriage in their lifetime. Pre-eclampsia affects 5%–10% of all pregnancies and is a leading cause of morbidity and mortality. Together these two conditions pose a significant problem to pregnant women.

Despite many advances in medical science over the years, our understanding of pregnancy in general, and these two conditions in particular, has advanced little. This lack of understanding of exactly what causes these two conditions has resulted in few successful treatments becoming available. Despite miscarriage being a first trimester condition and pre-eclampsia being a third trimester condition, there are similarities between the two. Maternal immunologic tolerance is necessary for the establishment and maintenance of a normal pregnancy. Immunological abnormalities are known to be associated with miscarriage and immunological components are also thought to have a role to play in the development of pre-eclampsia.

Reactive oxygen species (ROS) are known to have important functions in normal physiology but their overproduction can cause disease and it is this increased generation of ROS that is involved in the pre-eclampsia. Although oxidative stress has also been implicated in pregnancy, the role of antioxidants in recurrent miscarriage is poorly understood. The purpose of this book is to consider the roles played by antioxidants and the immune system in the development of the two conditions. The book discusses the role of antioxidants and cytokines within the peripheral circulation and at the maternal fetal interface.

By increasing our knowledge of the processes involved in the development of these two conditions, this will hopefully lead to more successful treatments becoming available.