

RUTH PENMAN (Macquarie)

Modelling IVF Data using the Continuation Ratio Model

Many couples experience fertility problems making it difficult for them to conceive a child. IVF (in vitro fertilization) offers many of these couples the chance to have a baby. The IVF process consists of a number of consecutive stages. Using the maximum stage reached as an ordinal response, an extended continuation ratio model was used to determine the risk factors that affect the process at any of these stages. In the initial model only the first attempt at IVF was modelled using this method. Many subjects have multiple attempts at IVF so this model was extended to a continuation ratio random effects model to allow for variation between individuals. The random effect was assumed to have a normal distribution. It was found that BMI (body mass index), female age and type of treatment are risk factors at some stages for both single and multiple attempts, although there is some variation in the results between the two models.