Personalised medicine for multiple outcomes : methods and application

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Stellingen

behorende bij het proefschrift

Personalised medicine for multiple outcomes: methods and application

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1. In a multicenter study with two competing outcomes it is useful to model a correlation between the hospital-level frailties for the two events (Chapter 2).

2. The AUC of a time-dependent binary marker can be estimated using transition probabilities of the illness-death model (Chapter 3).

3. A multi-state model for soft tissue sarcoma models gives more insight into the evolution of the disease compared to single endpoint models (Chapter 4).

4. The PERSARC model provides reliable prediction of post-operative overall survival and the probability of local recurrence for patients with primary high-grade extremity soft tissue sarcoma (Chapter 5).

5. Hospital ranking is a difficult and delicate task that can be approached using Empirical Bayes estimates (Normand et al. Journal of the American Statistical Association (1997)).

6. The area under the time-specific ROC curves, plotted as a function of time characterizes temporal changes in predictive accuracy (Heagerty and Zheng, Biometrics (2005)).

7. A clinical prediction model needs to be validated before it can be used in clinical practice (Collins et al. Annals of Internal Medicine (2015)).

8. For Markov models, prediction probabilities can be computed from Aalen and Johansen's estimator and their standard errors are available. For semi-Markov models, a simulation-based approach can be used to obtain standard errors for prediction probabilities (Fiocco et al. Statistics in Medicine (2008)).

9. Modelling covariate effects on the subdistribution hazard compared to the cause-specific hazard is more intuitive and easily explained to nonstatisticians (Fine and Gray, Journal of the American Statistical Association (1999).

10. The best clinical models come from a good collaboration between statistician and clinician.

11. Statistical methods in clinical articles should be explained so that the audience can understand them properly.