

Post-Doctoral position in Biostatistics: Individualized post-therapeutic follow-up using prognostic factors and type of first events

Responsible : Thomas Filleron

Tel : +33 (0) 5-67-61-63-95

Mail : filleron.thomas@claudiusregaud.fr

Lieu : Institut Claudius Regaud. 20-24 rue du Pont Saint Pierre. 31052 Toulouse Cedex, France

In oncology, after curative treatment for cancer, patients enter into a surveillance phase and are followed in a regular manner in order to detect relapses. For some cancer sites, many patients will relapse early and others will never relapse. However, most visits are planned irrespective of prognosis. Recently, we proposed a statistical method founded on an adaptation of the schedule of follow-up visits based on the dynamic process of the first event type: loco-regional relapse, metastases, or second cancer according to prognostic factors (Ataman 2006, Filleron 2009).

The main objective of this project is to develop statistical methodology which can allow the planning of follow-up visits in an optimal way based on a competing risks model (Fine and Gray 1998) with a component for cure (Jeong 2006), which takes account of the first event type and prognostic factors associated with the different event types. The model parameters can then be used to estimate event-specific cumulative incidences functions, whose quantiles can be used to plan visits around the time points where the events are most likely to occur. The aim of this modelling approach is to propose a lighter follow-up schedule for patients at very low risk of relapse and thus optimise resources in terms of the number of consultations and visits in the long term.

Information: This project is in collaboration with biostatisticians from the Lille and Marseille Cancer Institutes. This project obtained a grant from the French National Cancer Institute

Candidate profile:

Education: PhD in biostatistics, Epidemiology or Public Health

Experience: good knowledge in biostatistics, survival analysis, competing risks. Thorough technical knowledge of Stata and/or R programming.

Duration: 18 months

Date of start: as soon as possible

References :

- Ataman O, Barrett A, Filleron T, Kramar A. Optimization of follow up timing from study of patterns of first failure after primary treatment. An example from patients with NSCLC. Radiotherapy and Oncology 2006; 78 (1):95-100.
- Filleron T, Barrett A, Ataman O, Kramar A. Planning post-therapeutic oncology surveillance visits based on individual risk. Medical Decision Making. 2009; 29: 570-579
- Fine, J, Gray RJ. A proportional hazards model for subdistribution of a competing risk. Journal of the American Statistical Association. 1999; 94(446):496-509.
- Jeong JH. A new parametric family for modelling cumulative incidence functions: application to breast cancer data. Journal of the Royal Statistical Society: Series A. 2006; 169: 289-303.