

New methodological developments in population-based monitoring of cancer patient survival

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Long-term survival rates are the most commonly used outcome measures for patients with cancer. However, traditional long-term survival rates, which are derived by cohort-based types of analysis, have essentially reflected the survival expectations of patients diagnosed many years ago, and they have often been severely outdated at the time they became available. A few years ago, a new method of survival analysis, denoted period analysis, has been introduced to derive more up-to-date estimates of long-term survival rates. Meanwhile, this methodology has undergone extensive empirical evaluation, and the method is now applied to derive more up-to-date long-term survival rates in an increasing number of countries. In this presentation, an overview is given on the new methodology, its statistical background, empirical evaluation, computational realization and applications. In addition, most recent methodological developments in period analysis, including modelling approaches, are addressed. Application of period analysis is illustrated with data from population based cancer registries in different parts of the world. It is shown that, for many forms of cancer, long-term survival expectations of cancer patients achieved in recent years are much higher than suggested by previously available survival figures.