広島統計談話会

Hiroshima Statistics Study Group

第 276 回談話会を下記のように開催致しますので
御参集下さいますようご案内申し上げます。
You are cordially invited to the 276th meeting as scheduled below.

日　時：　2013 年 4 月 19 日（金）15:30 –
Date　：　April 19, 2013 (Fri) 15:30 –

場　所：　放射線影響研究所　講堂
Place　：　RERF Auditorium

演　者：　中島 栄二（放射線影響研究所 統計部 副部長）
Speaker　：　Eiji Nakashima, Ph.D.
Assistant Department Chief
Department of Statistics, RERF

演　題：　「低線量域に重きを置いた放射線量反応推定：原爆被爆者データへの制限付き三次スプライン・モデルの応用」
Title　：　“ Radiation Dose Response Estimation with Emphasis on Low Dose Range: Applications of Restricted Cubic Spline Models to Atomic-bomb Survivors Data ”

要　約：

Summary:

Elementary introduction of the restricted cubic splines (RCS: natural cubic spline; Stone & Koo 1985; Harrell et al. 1988; Durrleman & Simon 1989; Greenland 1995) and the 2nd degree fractional polynomials (Royston & Altman 1994) will be made. The RCS's is defined as the cubic spline with linearity constraints in both tails and is often used in the analysis of medical data. A good competitor to the RCS is the (2nd degree) fractional polynomial model due to its flexibility. In this talk, various atomic bomb (A-bomb) survivors data were analyzed using the threshold and the RCS dose response models and the fractional polynomial models that include the 2nd degree polynomial. For the RCS models, the knots system with 3 to 7 knots of the equally spaced percentiles in the dose range greater than 50 mGy were assumed, which results in the dose response to be linear at least less than about 90 mGy. Due to skewed dose distribution of A-bomb survivors, the equally spaced percentile knots system for the RCS analysis results in detailed depiction of the dose response less than about 0.5 Gy. Our applications include all solid cancer mortality data 1950-2003, stroke mortality data 1950-2003, glaucoma ocular hypertension prevalence data, and cataract surgery incidence data 1986-2005. Application of the fractional polynomial models will be discussed in comparison with that of RCS models.

＊ 都合により、開始時刻が 15：30 となっております。ご注意下さい。
＊ Please note that the starting time is 15:30 for certain reasons.