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Multivariate Survival Analysis

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“Impact of socioeconomic status on survival with AIDS”

- ★ American Journal of Epidemiology,
Volume 148, No. 3 (1998)

Statistics

- ★ *Median length of survival and cumulative probability of survival after an AIDS diagnosis were calculated using the Kaplan-Meier product limit method*
- ★ *Differences in survival period according to socioeconomic status were analyzed using log-rank*

Statistics

- ★ *Proportional hazards (Cox) regression was used to assess the association between survival and socioeconomic status after adjustment for potential intervening variables*
- ★ *All covariates were entered simultaneously into the multivariable model*

See Impact of socioeconomic status on survival with AIDS
American Journal of Epidemiology, Volume 148, No. 3 (1998)

Table 3 – Multivariable predictors of mortality among persons diagnosed with AIDS* (n=18,167), San Francisco, California, 1985-1995

Example: Cox Proportional Hazards Model

“Donation of blood is associated with risk of myocardial infarction”

- ★ *American Journal of Epidemiology, Volume 148, No. 5, 1998*

See: Donation of blood is associated with risk of myocardial infarction *American Journal of Epidemiology*, *Volume 148, No. 5, 1998*

Table 3 – Relative hazards and 95% confidence intervals (CI) for acute myocardial infarction associated with regular blood donations and other strongest risk factors among 2,682 men from eastern Finland followed for an average of 9 years from baseline examination in 1984-1989

“These results indicate that frequent blood loss through voluntary blood donation may be associated with reduced risk of acute MI in middle-aged men”

This was an observational study NOT a randomized trial

Seems likely that blood donors are different than non-donors

Can we be sure we adjusted for all covariates?

“Predictors of cigarette smoking and smoking cessation among adults with asthma”

- ★ American Journal of Public Health, *Volume 90, No. 48, 2000*

“Remarkably, up to half of U.S. adults with asthma have regularly smoked cigarettes”

“Furthermore, the predictors of smoking cessation, which is a clear priority in adults with asthma, have not been previously examined”

Subject Characteristics Table

See: Predictors of cigarette smoking and smoking cessation among adults with asthma. *American Journal of Public Health, Volume 90, No. 48, 2000*

Table 2 0 Current Smoking and Time Until Smoking Cessation Among Adults with Asthma