

Testing for unimodality in mortality trends

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In some diseases it is well-known that a unimodal mortality pattern exists. A clear example in developed countries is breast cancer, where mortality increased sharply until the nineties and then decreased. This clear unimodal pattern is not necessarily generalizable to all regions within a country. In this work, we develop statistical tests to check if this unimodality persists within regions using order restricted inference. The same methodology will be also used to provide change-points within regions as well as confidence intervals. Results will be illustrated using age-specific breast cancer mortality data from Spain in the period 1975-2005.

Key Words: breast cancer time patterns, order restricted inference, change-points