Relation of rainfall pattern and epidemic leptospirosis in the Indian state of Kerala

Leptospirosis epidemics in tropical countries are often related to heavy rainfall and flooding.1 The Indian state of Kerala has witnessed post-monsoon epidemics of leptospirosis in recent years. We investigated the relation between the pattern of daily rainfall and the incidence of disease in Calicut, North Kerala by plotting the number of confirmed cases having onset of illness on each day with the daily rainfall recorded for the district by the state meteorology department between July and October, 2002 (fig 1). The day of onset was calculated by subtracting the duration of fever from the day of admission.

The confirmation was by positive microscopic agglutination test (titres above 1/100; titre of 1/200 was also positive). A positive microscopic agglutination test (titres above 1/100; titre of 1/200 was also positive). Disease confirmation was by positive microscopic agglutination test (titres above 1/100; titre of 1/200 was also positive).

The pattern of rainfall has changed in the western ghats region of India—which includes Kerala—in the past century, with more rainfall less days during the monsoon months.3 There had also been rapid urbanisation and construction activities in the past two decades, resulting in blockage of natural drainage of rainwater and consequent water logging near human habitations.

If our hypothesis is correct, future epidemics of leptospirosis can be anticipated by studying daily rainfall patterns. The threat of community action can then be oriented towards improved water drainage and if necessary by disinfection or salination of water logged walking paths and wearing of effective protective footwear.

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References


Qualia years (QY)—not years—should be the unit of measurement of QALYs, DALYs, life expectancy, and life

The complementary concepts QALYs and DALYs combine years of life and quality of life in a single measure.17 In Arnesen and Nord’s words: “QALYs are years of healthy life lived; DALYs are years of healthy life lost. Both approaches multiply the number of years (x axis) by the quality of those years (y axis). QALYs use “utility weights” of health states; DALYs use “disability weights” to reflect the burden of the same states. If the utility of deafness is 0.67, the disability weight of deafness is 1–0.67 = 0.33. Disregarding age weighting and discounting, and assuming lifetime expectancy of 80 years, a deaf man living 50 years represents 0.67×50 = 33.5 QALYs gained and 0.33×50=1.65×(80–50) = 46.5 DALYs lost”.2

Note that QALYs+DALYS = 33.5+46.5 = 80.0 = lifetime expectancy (complementariness).

More accurately, we have to put QALYS = (0.67)×(50y) = 33.5 QALYS+DALYS = (0.33)×(50y)×(1.0)×(80–50y) = 46.5y. This means that the unit of measurement of QALYs and DALYS is years (y). As y is the unit for lifetime, using the same unit for the product (lifetime)×(lifequality) is confusing.

Saying that quality is rated on a scale from 0 to 1, we have implicitly transformed the real but unknown scale of quality into a standard scale, where 0 denotes no quality at all and 1 the 100% of quality expected (lifequality expectancy). Therefore QALYs and DALYS, combining actual years and dimensionless quality, are, in fact, semi-standardised measures. In a previous article we proposed the fully standardised measures SQALYs/SDALYS.3 This article, unstandardising lifequality as well, proposes the fully unstandardised measures UQALYs/UDALYS.

Let q be the unit of measurement of quality—qualio in singular, qualia in plural. Continuing the example above, let us assign lifequality expectancy 160q to dimensionless 1, and lifequality 107q to 0.67—in the same manner as dimensionless 1 was previously assigned to lifetime expectancy and 0.625 to 50y. Thus, fully unstandardised QALYS = UQALYS = (107q)×(50y) = 5350qy, and fully unstandardised DALYS = UDALYS = (160q–107q)×(50y)+ (160q)×(80–50y) = 7450qy. That is, from the total expected lifetime of 80y lived = (160q)×(80y) = 12800qy = life expectancy, 5350qy were actually lived and...
practice in the concentration camps, in which it is not difficult to recognise the desire of an evidence based clinical practice:

I remember at that time reading one of those pamphlets considered suitable for POW medical officers about clinical freedom and democracy. I found it impossible to understand, I had considerable freedom of clinical choice of therapy; my trouble was that I did not know which to use and when. I would gladly have sacrificed my freedom for a little knowledge.

The book is conceived as homage to A Cochrane, to be either in his complete biography, or a critical introduction to his thinking. The book, however, will be read with pleasure by the people that have been felt influenced by the ideas of A Cochrane. On the other hand, young epidemiologists will find in this book, impregnated with social commitment and with ethical values, a superb complement for their career education.

Jaime Latour-Pérez

Global AIDS: myths and facts


The authors of Global AIDS: myths and facts subtitle their work, Tools for fighting the AIDS pandemic. Indeed, they argue that “informed, determined activism can make a difference” and urge that readers to “get involved in the ongoing effort” to end the AIDS pandemic (page 184). Given this raison d’etre it comes as no surprise that much of their text is devoted to providing practical information that readers can use themselves or share with others. They offer a comprehensive array of AIDS issues ranging from vaccine development to drug pricing to organisational corruption as an impediment to expanding HIV prevention and treatment programmes.

At the heart of this volume is a sincere effort to debunk myths and misconceptions that interfere with efforts to systematically and comprehensively tackle the global AIDS epidemic. Readers who are knowledgeable about HIV/AIDS may have difficulty acculturating to the use of “myths” as the unifying construct of the text, as at times, they are, of necessity, overstated (for example, “A vaccine will soon be available to prevent HIV infection”, “AIDS is primarily an African problem,” etc). Also, one wishes that the editing might have been more careful—a few of the US statistics cited in chapter one are incorrect. For example, it is not accurate that “in 2001 for every AIDS case diagnosed among gay and bisexual men in the U.S. two were diagnosed among heterosexual men or women” (page 14).

In summary, this book provides an accessible overview of the important policy issues facing communities in their struggle to take collective action against AIDS. Readers are provided with informational resources and offered practical recommendations that can help them confront what is undoubtedly the single most important global health crisis of our lifetime. Its message of continued effort in the face of adversity is particularly welcome.

Ronald O Valdészieri

Epidemiologic methods. Studying the occurrence of illness


Several books introducing epidemiology are available. They usually follow the traditional layout: from initial definitions to the description and control of biases and measurement errors and it becomes challenging to offer something “different”. The authors agree that it originates from the teaching experience and materials of the authors. Furthermore, despite being an introductory text, the authors give the reader a flavor of more advanced issues such as residual confounding or interaction. In summary, a nice example of how epidemiology can help students “derive an almost esthetic pleasure from epidemiology”.

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