EPIZOOTIOLOGY OF RABIES: EURASIA AND AFRICA

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INTRODUCTION

It is a formidable task to summarize, in a fairly short chapter, 
the epizootiology of rabies in Eurasia and Africa. Indeed, these 3 
continents presently contain almost all types of rabies, some of which 
are in a constant state of evolution. To simplify matters, we have 
adopted the following plan of exposition for each continent: a brief 
history of rabies; general characteristics of the current epizootiological 
situations (viruses, vectors); official statistics of the 
disease in each country; effect of preventive measures; and general 
trends in epidemiological evolution. First of all, however, we shall 
review some basic information regarding vectors, viral strains, and 
statistical evaluations.

BACKGROUND

The epidemiological state of a continent, or of the various 
regions that constitute it, is generally characterized by 2 types of 
data: quantitative (statistics of the number of cases of rabies or, in 
default of these, the number of human anti-rabies treatments) and 
qualitative (nature of the animal vectors and the rabies viral isolates).

1. The Statistical Data

Cases of Animal and Human Rabies

With rare exceptions, the figures reported in this chapter are 
these officially available from national agencies, and relate only to 
cases of laboratory-confirmed rabies. Laboratory diagnoses considered
acceptable are carried out by the specific immunofluorescence tech-
nique, by mouse inoculation, or by examination for Negri bodies (see
Webster and Casey, this volume). It is clear that the published
laboratory figures reflect only a small proportion of the true cases of
rabies. Reliance on clinical diagnostic data is not highly reliable,
therefore, although the figures may provide an indication (and perhaps
the only one) of the incidence of rabies in a particular country.

**Number of Human Post-exposure Treatments**

In certain countries without diagnostic centers, but in which
rabies is prevalent, the only available statistics are those of the
number of human post-exposure treatments. From relationships estab-
lished in better-equipped neighboring countries with comparable epidem-
iological situations, however, it is possible to obtain an approximate
idea of the incidence of canine rabies. Comparative studies of the
statistics of certain countries of Africa and the Orient have estab-
lished the following general relationship: for every 2,500 human
treatments there is a yearly average of 4 cases of human rabies and 60
canine cases, corresponding to a canine population of 100,000 animals
and a human population of 1,000,000 (see ref. 6).

2. The Viruses and Vectors of Rabies

**The Viruses**

According to the World Health Organization Expert Committee on
Rabies (1), there are presently 4 serotypes of rabies virus (Lyssa-
virus, Rhabdoviridae) that can be distinguished on the basis of
cross-protection tests in mice. Serotype 1 (prototype: Challenge Virus
Standard, or CVS) is considered to be the only "true" rabies virus.
The 3 others are the "rabies-related" viruses: serotype 2 (prototype:
Lagos bat), serotype 3 (prototype: Mokola) and serotype 4 (prototype:
Duvenhage). Use of monoclonal antibodies (1-4) has permitted further
differentiation of these serotypes into numerous variants or isolates
that are frequently characteristic of a particular geographical region
(see King and Crick, this volume).

In certain specific cases, notably in Africa, the rabies-
like viruses have their own epizootiological roles (2). Some isolates
have been obtained from within serotype 1 that appear to have acquired