



## Rabies: the neglected zoonosis in communicable disease epidemiology

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Rabies is a vaccine-preventable neglected zoonotic disease posing a major global public health burden. In most of the developing countries of Asia a great majority of human deaths occur due to canine rabies, half of those bitten by suspected rabid animals are children and adolescents<sup>1, 2</sup>. The disease is endemic in mainland India with stray infected dogs as the main reservoir. There is absence of a nationally representative epidemiological data on rabies with estimated annual incidence 2 per lac of human cases affecting male, adults and children, rural mass, poor socio-economic groups; bites mainly in the extremities; incubation period up to six months with Hydrophobia as the prime feature; half of affected sought health care, one tenth incomplete treatment. In India, the annual person-days lost from animal bites are 38 million; one-thirds of annual mortality is in India; post-exposure treatment (PET) costs \$25 million per annum<sup>3,4,5</sup>.

The 74-country World Rabies Day (WRD) initiative launched in 2007, with Alliance for Rabies Control, Centre for Disease Control and Prevention, Atlanta, World Organization for Animal Health and Pan American Health Organization fight against this global endemicity by thinking globally and acting locally as high mortality in human cases is due to severe shortage to non-existence of Rabies immunoglobulin (RIG) that is recommended with the initial dose of vaccine. Research is also needed for cost-effective alternative biological to RIGs as a public health priority. September 28, 2011 marked the fifth anniversary of the campaign to educate by easily translated materials using electronic media, empowered people at all levels in 85 countries<sup>6,7</sup>.

World Health Organization is fighting to break the "cycle of neglect" affecting prevention and control in

low- and middle-income countries through advocacy, surveys, studies, and research; promote prevention through the elimination of animal rabies; ensuring pre-hospital care with instant meticulous local wound management; promotes wider access to appropriate PET using modern vaccines through multi-site intradermal regimen reducing the cost, domestic production of biological to cover up global critical short supply of RIG, continuing education of all professionals in prevention and control; elimination in all Latin American countries by 2015; dog transmitted human rabies in South-East Asia by 2020; five-year plan (2012–2016) to halve the currently estimated number of human rabies deaths

GJMEDPH 2013; Vol. 2, issue 3

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Conflict of Interest—none

Funding—none

in endemic countries<sup>8,9</sup>.

Government of India, in collaboration with key partners noted that the main constraint is the lack of a comprehensive national program and regionally coordinated control efforts with six bordering countries, as done by Sri Lanka and Thailand. National Centre for Disease Control (NCDC) launched a pilot project in 2008 in five Indian cities for training of health professionals in animal-bite management, raising public awareness and to ensure availability of treatment by closely working with the municipal corporations; develop surveillance activities. Non-governmental organizations like Rabies in Asia Foundation, APCRI, Animal Welfare Board of India, Schering-Plough Corporation are promoting the Animal Birth Control and Anti-Rabies Program in major metropolitan cities. The Centre for rabies-free India by 2020 is contemplating a national program to control rabies<sup>5,7</sup>.

"Rabnet" has been promoted by World Health Organization to collect data electronically by interactive information system to generate maps and graphs using human and animal rabies data. In developed countries the rabies control has been achieved by the 'open secrets': a legally notifiable

disease; mass routine pet vaccination; tight border control for dogs; stopping wild rabies by distributing oral vaccine baits; open garbage not allowed to support stray dog. The city of Jaipur has controlled human rabies through mass vaccination and neutering of dogs. The keys to success in rabies intervention in India lies in a holistic multipronged approach is needed to control the growing hazard by involving stakeholders from all levels: political leaders, health care providers, experts in Community Medicine and Family Medicine, veterinarians, public health experts, legal authorities, social activists. Mass intensified behavior change communication programs are needed to augment public awareness at the primary health care level in concurrence with freely availability of modern vaccines for both men and animals. Implement compulsory pet licensing and vaccination with animal welfare programs; dangers of inadequately managed animal bites; optimum mix of wound care, vaccine and RIG; popularize contemporary vaccines in the intradermal route (requiring one-tenth of the intramuscular dose), made cheaper, extensively and reachable. Rabies should be declared as a notifiable disease in India along with launching of an organized surveillance system forthwith for updated data<sup>10,11</sup>.

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