The EchiTAb Study Group
A global collaboration to improve the treatment of snakebite victims in Nigeria and wider West Africa

The Problem
Over 90,000 people worldwide, and >20,000 in West Africa, are killed each year by the neurotoxic or haemorrhagic effects of systemic snake envenoming. Many more snakebite victims suffer from severe tissue-destruction and disfigurement.

Antivenom is prepared from IgG of venom-immunised horses or sheep. It is the only effective treatment of snake envenoming. Nigeria is the only continent reliant upon commercially-produced antivenom, mostly from European manufacturers. Elsewhere, antivenom production receives government subsidies. The expense of antivenom production and retail (over $200 per treatment in Africa) reduced governmental demand, which reduced commercial manufacturing incentives.

In the late 1990s, this resulted in the cessation of antivenom supply for Africa – with a consequent dramatic rise in snakebite-induced mortality and morbidity.

The Solution
The Nigerian Federal Ministry of Health has, uniquely in Africa, recognised that snakebite is a major public health concern. A collaboration was formed to address the antivenom supply crisis in Nigeria – the EchiTAb Study Group.

Established a collaboration of clinicians, scientists and antivenom manufacturers:
- Federal Ministry of Health, Republic of Nigeria
- Liverpool School of Tropical Medicine, UK
- Nuffield Department of Clinical Medicine, University of Oxford, UK
- Instituto Clodomiro Picado, Costa Rica
- MicroPharm Ltd, Wales, UK

Established & constructed snakebite-specific resources in Kaltungo Hospital

Establishment of venom-immunising and antivenom testing resources:
- Extraction and storage of venom from Echis ocellatus, Bitis arietans and Naja nigricollis
- Provision of these venoms to antivenom manufacturers worldwide
- Preclinical testing of experimental antivenoms

Completion of a double-blinded clinical trial of new EchiTAb antivenoms:
- EchiTAbG – an ovine Echis ocellatus monospecific antivenom: MicroPharm Ltd
- EchiTAb-Plus-ICP – an equine polyspecific antivenom: Instituto Clodomiro Picado

Delivered over 37,000 vials of antivenom to Nigeria
- Equating to over 18,500 life-saving treatments
- Production of both antivenoms continues – subject to funding

Increased public, government & scientific awareness of ETSG objectives:
- Meetings with Ministers of Health, State Governors, Emirs
- Poster displays and oral presentations in medical and pharmaceutical conferences in Nigeria
- Oral presentations at International Conferences (Global Issues in Clinical Toxicology, 2008)
- Publications in International peer-reviewed journals (eg, Lancet, PLOS Medicine)

Current and Future Activities of the EchiTAb Study Group
- Constructing, equipping and staffing an Antivenom Production Facility in Nigeria: comprising a herpetarium, an animal housing/bleeding unit
- Establishing an International Research Centre in Kaltungo for instruction of national and international students in the clinical treatment of snake envenoming (and other studies on:
  - Epidemiological studies to establish the medical burden of snake bites in Nigeria
  - Preclinical studies to determine the efficacy of the EchiTAb antivenoms against the effects of venoms from other medically-important snakes in Africa – ‘antivenomal’
  - Socioeconomic studies determining the burden of snake bites, and its treatment, to rural African communities and the hospitals serving them
- Studies identifying effective measures to reduce snakebite incidence that are technologically appropriate to the rural communities that risk greatest exposure in all their daily activities
- Establishing a Public Health Education Program on the prevention and treatment of snakebite
- Raising awareness of the medical problem of snakebite in Africa with International Health and Funding agencies: the WHO, The B&M Gates Foundation, World Bank, DfID etc.

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