

THE GENETIC MAP OF ASIA

Science from Asia was on the cover of Nature in December 2020. An ambitious project called Genome Asia 100K is behind this. The project was launched in 2016 to fill the gap in genetic data from Asia. Though Asians comprise 40% of the world population, only 6% of the world's recorded genetic data is from here.

The goal of the project is to sequence the genomes of 100,000 Asians. Genome Asia 100K is a non-profit organization which has shown remarkable cooperative effort between academia and industry. It is being hosted by Nanyang Technological University, Singapore while the industrial support has come from MedGenome in India, Macrogen from South Korea and Genentech from the US.

The pilot study published in Nature details the genetics of 1739 people from across Asia. And the findings are interesting. It appears that while the genetic data from Europe points towards a single ancestry, the Asian data suggests at least 10 different lineages.

Genomic data was sequenced in people from India, Malaysia, China, Mongolia, Korea, Philippines, Pakistan, Papua New Guinea, Japan and Russia. Further data crunching was conducted in powerful supercomputers in Singapore. A hold on genetic big data will be the gateway to innovation in newer drugs and personalized medical therapies.

(Nature 4 December 2019)

SNAKE BITES – A FRESH LOOK

The anti-venoms available in India are against the 'Big Four' - the spectacled cobra, the common krait, Russell's viper and the saw scaled viper. The manufacturing protocols have not changed an iota over the past 100 years. The various other species which cause serious envenomation have been completely neglected.

Kartik Sunagar, an evolutionary biologist from Indian Institute of Science Bangalore, along with herpetologists in Chennai and Mysore recently published important data about the venom composition of the neglected yet medically important Indian snakes. They found that the currently available anti-venoms had poor efficacy against many neglected snakes. They also found large inter-species differences in venom composition depending on the area where they were found. The group is now working with anti-venom manufacturers to develop region specific anti-venoms.

Globally many innovative products are also in the pipeline. Presently only 15% of the antibodies in commercial anti-venoms actually target snake toxins. So scientists are trying to develop specific antitoxins in the laboratory, which can be used as and when required. Another new molecule is Varespladib, which targets phospholipase A2 found in a wide range of snake venom. This could fill a critical gap in the prehospital treatment of snake bites. It is refreshing to see ground level research into important neglected medical problems of India.

(PLoS Negl Trop Dis 2019)

WHERE IS ALL OUR HEALTH DATA GOING?

Data is the new oil. Large companies like Amazon and Google mine it to further economic interests. But what happens to all the health care data collected at the national level by the government? Health Information analyst Arunima Mukherjee and colleagues have written an eye opening article in the Economic and Political Weekly.

We are just beginning our entry into the data collection era. It behooves us to understand the intricacies of what data is being collected, who gets to see it, what the implications are and what action results from all this data which gets collected using public money. While ministries of health are primary users of data, there are increasingly major corporate interests involved in the development and management of data systems, for example, in the health insurance sector.

Around 2006 when the National Rural Health Mission analyzed its data from three states, they found that less than 3% of the data collected was used to generate health indicators. Unnecessary data collection added a huge burden on the health worker reducing their time for actual health care. They then decided that no data must be collected more than once (eg, under more than one health program) and only pertinent data may be collected.

Currently almost no data is made public to citizens. Another cause for concern is the individual data collected without adequate privacy standards and regulation. Are the gargantuan investments in information technology in healthcare rewarded by justifiable gains? We need a systematic evaluation, review and self-improvement strategy.

(Economic & Political Weekly 4 January 2020)

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