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Louis Pasteur Oration- Omesh Kumar Bharti

Himachal Model- a perfect tool to control rabies by 2030 globally

“Nearly 59,000 healthy people die of rabies each year globally, one in every 9 minutes. Rabies can be a measure of reach and equitable access of people to quality care that makes a clear-cut life-and-death difference. It is often shocking. Can rabies be the tracer to measure whether health care, veterinary and other services are reaching the poorest and most marginalized people in India? The world has the tools and expertise to end the suffering of rabies. With a global goal of ZERO human rabies deaths by 2030, worldwide, countries and partners are working to make this a reality”, says Dr. Bernadette –ABELA RIDDER, team leader NTD, Geneva.

Is ZERO human rabies deaths by 2030 really achievable? YES. We have shown this to be a possibility in Himachal Pradesh where we are touching zero this year with only one death, that too due to facial nerve involvement, against the estimated 0.5/100000 i.e. 35 deaths a year in 2005 as per Millennium Death Study.

We have a refrigerator in each Primary Health Center to store rabies vaccine (RAV) and Equine Rabies Immunoglobulins (eRIG). Both biologicals are free under Mukhya Mantri Nishulk Dawai Yojana and Post Exposure Prophylaxis (PEP) is given free of cost to all now. This has been possible due to our continued research for affordability done at State Intradermal Antirabies Clinic and Research Centre (SIARCRC), DDU Hospital Shimla. In 2008, we implemented intradermal vaccine administration by adopting pooling strategy and thereafter trainings were given to all doctors, pharmacists and nurses from Himachal Pradesh at State Institute of Health & Family Welfare, SIHFW, Parimahal. Directions were issued by the then Director of Health Services (DHS) Dr. Sulakshna Puri to all doctors to shift from intramuscular route to intradermal route of rabies vaccination (IDRV) identifying pooling centers to share the vials of vaccine and eRIG. A manual on administration of IDRV was also published through National; Health Mission and we became the second centre to start IDRV in North India after Uttar Pradesh.

Then, a situation in 2014 came when vaccine was available but Rabies Immunoglobulins were not available. Some deaths including those of tourists occurred despite having four shots of IM rabies vaccination. This situation forced us to look for alternatives to save lives. We procured some vials of eRIG from CRI Kasauli and decided to administer eRIG only locally into the wound covering its surface till its depth. We got the guidance from our mentors like Drs S.N.Madhusudana, M.K.Sudershan, Henry Wilde, David C Anderson, Bernadette –ABELA RIDDER, Lea Knopf and local mentors like Dr. D.S. Gurang, then DHS and Dr. P.L.Gaunta then Sr. Medical Superintendent DDU Hospital. Technical clearance for the feasibility of such a study was taken from NIMHANS and Ethical approval was taken from JayPee University, Solan.

We realized the correctness of our decision very soon. We observed people bitten by suspected rabid dogs survived with this intervention of IDRV and only local wound infiltration of eRIG only without any systemic IM injection as then recommended by WHO. We decided to get some serum samples tested for seroconversion and all the 30 samples were found to have antibodies up to 28 times above desired cut off limit of 0.5 iu/ml of serum.

This intervention brought down the cost of total prophylaxis to less than Rs. 350 (\$ 5) per PEP, which was equivalent to the cost of one IM injection of rabies vaccine that was being administered before we implemented IDRV in 2008. With this huge cost cutting, the government decided to offer complete PEP free of cost to all in government hospitals. By this time a long pending Public Interest Litigation (PIL) was also decided by the Himachal Pradesh High Court directing the Himachal Government to make anti- rabies vaccine and Anti Snake Venom (ASV) available upto PHC level free of cost to everyone all the time.

Since Himachal has 100% electrification, all PHCs have been provided with the facility of a refrigerator to store rabies vaccine and ASV. All PHCs are having trained staff to administer IDRV and local wound infiltration of eRIG.

The “**Himachal Model**” has shown that we can achieve Rabies Free India by 2030, provided determined action is taken to make rabies biologicals available up to the village level where most of the rabies deaths are happening. More so, this can be achieved at a cost 10 times less than was possible in 2008 by adopting newer methods as advocated by the WHO in its new cost, dose and time sparing guidelines (**TRS 1012**), that Himachal Pradesh is following since May 29, 2018. We have created a real time interactive whatsapp group called “**Stop Rabies Initiative HP**” in 2015 to send pics of wounds, share videos of infiltration and disseminate other information including availability of rabies biologicals.

Increasing cold storage capacities at District level for continuous supply of rabies biologicals, providing wound washing facilities at all ARCs and strengthening rabies death surveillance within Himachal and bordering states are the areas that need more focus to achieve the objective of ZERO human rabies death by 2025. More research on maximizing use of open vials of vaccine and eRIG is required to further take the PEP up to village level and cope up frequent shortages.

We in Himachal are determined to achieve ZERO Human Rabies deaths by 2025 and work plans are ready to achieve this objective so that no one should die of Rabies, saving precious lives mostly of the poor living in villages and remote forest areas.

“Let’s be the generation that rises to end the scourge of inequality that rabies exemplifies,” says Dr. Bernadette. Let’s break the chain of transmission at its weakest link in rabies PEP i.e. **only wound infiltration of eRIG** apart from awareness of wound care and low cost IDRV as advocated by Dr. David C Anderson, to realise WHO goal of Rabies free India and the World by 2030.