

Original Article

IDRV & ERIG: The Cost effective arsenal in Rabies prophylaxis

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Introduction

Rabies is an important public health problem in India. Maximum numbers of deaths due to human Rabies are reported from our country. It is estimated that in India 1.7 crore animal bite exposures lead to 20,000 deaths. 95% of the 50,000 global rabies deaths are because of dog bites^{1,2}. Rabies is a 100% fatal disease which can be prevented by timely and appropriate Anti Rabies prophylaxis. Primary care of wound, proper categorisation of bite & use of Rabies Biologicals such as RIG and Vaccine can prevent such a dreaded disease. The Anti Rabies Clinic of MKCG Medical College Hospital is a tertiary care centre catering to 10 southern districts of Odisha. The rate of reporting of new Category-III cases is nearly 450-600 per month. This Institute is the first in the state to introduce IDRV since 27th April, 2007. At present ERIG for category-III exposures is also being administered free of cost by Govt. of Odisha over last three years.

Objective

1. To calculate the amount of IDRV & ERIG used per day.
2. To calculate the cost of IDRV & ERIG used per day.
3. To compare the cost of IDRV & ERIG against TCV by Essen regimen.

Methodology

Hospital based cross-sectional study conducted in Anti Rabies Clinic of M.K.C.G Medical College Hospital from 1st April to 30th Sept. 2008. Data was collected from the registers & daily reports and the average amount of ARV & ERIG required per day was calculated. The cost of the rabies biological used in the ARC was estimated from the cost incurred by the purchase section of Central Drug Store of Govt. of Odisha.

Observation and Discussion

The Anti Rabies Clinic, M.K.C.G Medical College, Berhampur was the pioneer institute of the state to implement IDRV from 27th April 2007. The average new cases registered in ARC, MKCG Medical College, Berhampur was **15-20**. The average number of doses of

vaccine required per day was **55-65 doses**. The cost per day @ Rs 180/- per dose of CCV(PVRV Inj Abhayrab) was found to be Rs 10,620/- if administered by Essen regimen. The cost of ARV by IDRV was Rs 2,124 /-. The average amount of ERIG used per day in the ARC during the study period was 115 ml/day basing on the recommended dosage by WHO³.

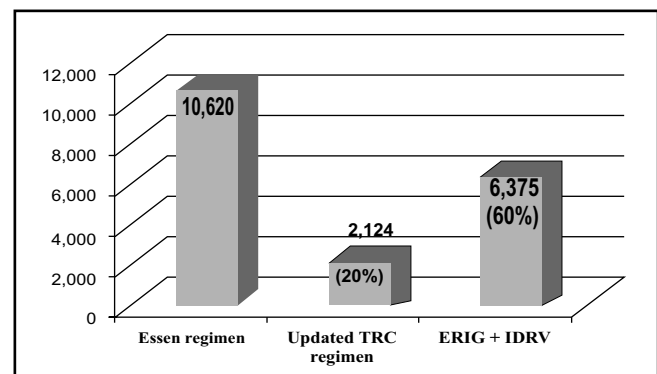


Fig 1: Comparative cost

As per the Central Drug Store of Govt. of Odisha the price of inj. Abhayrab (PVRV = 0.5ml) & inj. Equirab (ERIG = 1500IU in 5ml vial) was Rs. 180 per vial & Rs. 185 per vial respectively. If inj. Abhayrab would have been administered by Essen regimen, the cost of vaccine only was calculated to be Rs. 10,620/-. As IDRV is given since 27th April 2007 the cost of the vaccine has been reduced to Rs. 2,124/- which is nearly 1/5th of the cost to have been incurred if Essen regimen was used. The cost of ERIG used for Category-III cases & amounting to 115ml per day was Rs. 4,255/-. The combined active & passive immunization carried out with IDRV and ERIG will incur accost of Rs. 6,375/- which is still 40% less than the cost to have been incurred for the vaccine only if given by the Essen regimen.

Since Nov. 2009 the Govt. of Odisha has supplied ERIG to the Anti Rabies Clinics of the three Govt. Medical Colleges & Capital hospital at Bhubaneswar. The free supply of vaccine & Rabies Immunoglobulin to all cases attending the ARCs has a definite impact on case attendance. The average case registered in the year 2007 was 406 which has increased to 498 in the year 2009

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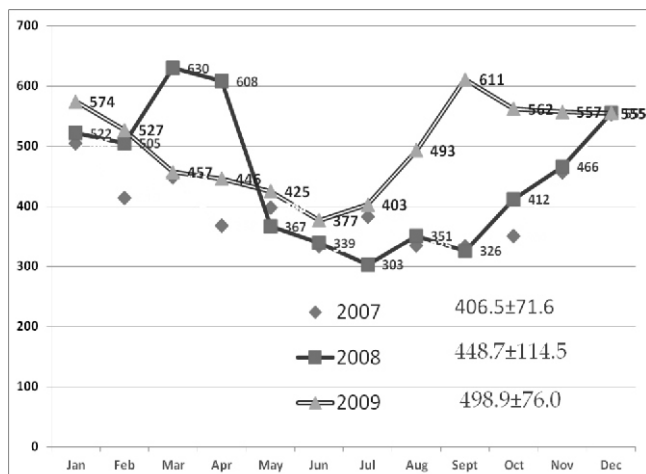


Fig II: case attendance

which was found to be extremely statistically significant ($P < 0.0001$).

Conclusion

Rabies is a fatal zoonotic disease and India accounts for nearly 1/3rd of global rabies cases. The cost of rabies biologicals is one of the major factors of incomplete treatment leading to higher probability of succumbing to the disease. Providing antirabies vaccines to the exposed cases by Essen regimen puts a great burden on the Govt.

exchequer. IDRV is the cost effective mode of active immunization against rabies. However simultaneous passive immunization should be carried out for all Category-III exposures, otherwise partial treatment may prove fatal.

Passive immunization with HRIG though proved to be safe but is prohibitive in cost. The currently available ERIG (inj. Equirab) is a highly purified RIG & is also safe⁴. The combination of IDRV & ERIG saves nearly 40% of the cost which the Govt. would have incurred if TCV alone was administered by Essen regimen. So IDRV & ERIG are the most cost effective rabies biological which can be used for post exposure cases not only in India but also in other economically deprived countries as a tool towards decreasing the global burden of rabies

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Announcement

The APCRI Journal is published twice a year. Once in January and again in July. The APCRI Journal invites Contributions from the Scientific Community, on All aspects of Rabies and Related Matter, in the form of Original Articles and Review Articles, Brief Reports, Case Reports, Personal Viewpoint, Letters to the Editor, Notes and News, Your Questions and Book Review.

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