Letters to Editor

Simple random sampling technique was used for collection of data. The study subjects were interviewed with structured and pre-tested questionnaire. Mean age of study subjects was 26.75 years. 77.14% of the study subjects were Hindus. 17.5% of the study subjects were illiterate while only 3.81% study subjects were studied up to graduation. 37.62% study subjects were educated up to high school. 90.48% study subjects were housewives, while 5.71% were laborers. 2.86% study subjects had own business and only 2 were employed. Socio-economic status according to modified B. G. Prasad classification showed that majority of the study subjects belonged to class III (33.8%) followed by class IV (31.9%). Mean age at marriage was 18.47 years. The most common reason of son preference was support at old age (57.14%) followed by demand for male child by other family members and community (32.88%). Study by Jai Rup Singh and Centre for Research on Environment Health and Population Activities, Katmandu, Nepal also observed similar reasons for preference to male child. (2,3)

The person who had male child will go to heaven (30%) after death was one of the beliefs among study subjects, which was also one of the important reason for preference for the male child. The most common reason for preference to girl child was like for girl child (62.38%). There was no association found between literacy status and socio-economic class of the study subjects and preference to male child in the present study. 22 (10.47%) among 210 subjects had gone for sex determination during their pregnancy for male child. Study showed highly significant association between literacy status and sex determination during pregnancy ($\chi^2$ value=21.55, $P$ value<0.001).

176 (83.80%) among 210 subjects were aware of the pre-conception–pre-natal diagnostic technique (PC-PNDT) act, while 34 (16.19%) were not aware for the same. No association was found regarding the relation between awareness of PC-PNDT act and study subjects underwent for sex determination during pregnancy ($\chi^2$= 3.51, $P$>0.05).

A UN Convention to Review Status of Women” at UN headquarters, New York by Patel Vibhuti also stated that decline in sex ratio is associated with the increase in female literacy rate. (4)

One of the important findings of the study was that 103 (49.04%) of the study subjects had given the history of teen-age pregnancy. Recent National Family Health Survey-3 also shown that 30% women underwent teen-age pregnancies. (5)

The issue of teen-age pregnancy needs attention and further research is required to explore this issue.

In conclusion, the present study has shown that there is a preference for male child in the community. To improve the declining child-sex ratio, it is essential to promote a positive image of the girl child and to value and celebrate the girl child’s life in our family and community.

Acknowledgement

The Dean, Smt. Kashibai Navale Medical College, Narhe, Pune - 411 041, India.

References

1. Government of India. Census of India 2001—Census 2001 provisional results- population totals: India. Paper-I of 2001.
2. Singh JR. Bio-ethics of sex preference. In: Fujiki N, Macer DR, editors. Bioethics in Asia. Eubios Ethics Institute; 1998. p. 398-402.
3. Centre for Research on Environment Health and Population Activities, Katmandu, Nepal. Sex selection: pervasiveness and preparedness in Nepal. Paper presented in 4th Asia Pacific conference on reproductive and sexual health and rights, Hyderabad, India; 2007.
4. Patel V. A UN Convention to review status of women. New York: Paper presented at United Nations Headquarters; 2005.
5. National Family Health Survey-3. Available from; http://www.nfhsindia.org/factsheet.shtml [last accessed on 2009 Aug 28]

Madhura Ashturkar, Kevin Fernandez, Harshal T Pandve
Department of Community Medicine Smt. Kashibai Navale Medical College, Narhe, Pune - 411 041, India.
E-mail: dr_harshalpandve@yahoo.co.in

Received: 02-09-09, Accepted: 25-03-10, DOI: 10.4103/0970-0218.69286

Intradermal Cell Culture Rabies Vaccine: A Cost Effective Option in Antirabies Treatment

Sir,

In India, previously nervous tissue vaccines (NTVs) were the mostly used vaccines for antirabies treatment, now this being replaced by modern, safe and effective cell culture vaccines (CCVs) due to NTV’s inherent neuroparalytic side-effects. But high cost and limited availability are the limiting factors for the wider use of CCVs. Following WHO recommendations, results of clinical trials and international experience, Drug Controller General of India (DCGI) approved the use of safe, efficacious and feasible ID route of administration of CCVs from February 2006. In the context of recent
introduction of the ID regimen in Kerala in 2009, we undertook a retrospective analysis of case records to calculate the cost benefits of ID regimen, if it had been implemented in this tertiary hospital set-up for the past three years (2006-2008). Our main objectives were to assess the utilization of antirabies cell culture vaccines IM route for a period of three years in the preventive clinics, to find out the total cost of ARV used in this period and to compare the cost of IM regimen with ID regimen in terms of cost benefits.

We did a retrospective analysis of case records of a three-year period (2006-2008). All cases who have been treated with intramuscular ARV (both partial and complete) for a period of three years (2006-2008) in the preventive clinic of Calicut Medical College were included in the study. It was noted that during this span, purified vero cell vaccine (PVCV) supplied by the hospital was used which cost about Rs.280/vial in the market. The cost of ARV for three years was calculated and compared with intradermal regimen (modified thai schedule). The benefit in terms of expenditure to the Government was calculated if ID regimen had been used in all these cases.

Updated Thai regimen involves injection of 0.1 ml of reconstituted vaccine per ID site and on two such ID site per visit on days 0, 3, 7 and 28. Day 0 is the day of first dose administration of ID RV and may not be the day of animal bite.

Our study highlights the economic advantages of using ID regimen, as theoretically only 0.8 ml of vaccine is needed for each patient resulting in use of less than 1 vial/patient as opposed to 5 vials/patient that receive PEP using IM route. In case of PVRV which is used in our preventive clinic, about 10 lakhs of rupees for 2006, 2007 and 20 lakhs for 2008 could be saved per year if ID route of administration had been followed in our clinic as shown in Table 1. In this regimen, only four visits are needed to complete vaccination. Day 14 is skipped here as compared to IM regimen. So by this, we are able to reduce the indirect cost involved in terms of man hour cost, travel time and expenses for that visit. Vaccine shortage is a problem in our clinic and also in most Government hospitals and most of those who turn up for treatment cannot afford to buy the complete schedule of vaccines as each dose ranging from Rs.280 to Rs.300. Data from preventive clinic shows that patients attending the clinic and ARV used is increasing year by year, adding financial burden for the purchase of ARVs. To address these issues, where vaccine and money are in short supply, ID route is ideal in terms of economic benefits, safety and efficacy. This reduces the cost of vaccination by about 70-80% and this clearly makes an attractive option for resource-starved countries like ours.

Updated Thai regimen involves injection of 0.1 ml of reconstituted vaccine per ID site and on two such ID site per visit on days 0, 3, 7 and 28. Day 0 is the day of first dose administration of ID RV and may not be the day of animal bite.

Our study highlights the economic advantages of using ID regimen, as theoretically only 0.8 ml of vaccine is needed for each patient resulting in use of less than 1 vial/patient as opposed to 5 vials/patient that receive PEP using IM route. In case of PVRV which is used in our preventive clinic, about 10 lakhs of rupees for 2006, 2007 and 20 lakhs for 2008 could be saved per year if ID route of administration had been followed in our clinic as shown in Table 1. In this regimen, only four visits are needed to complete vaccination. Day 14 is skipped here as compared to IM regimen. So by this, we are able to reduce the indirect cost involved in terms of man hour cost, travel time and expenses for that visit. Vaccine shortage is a problem in our clinic and also in most Government hospitals and most of those who turn up for treatment cannot afford to buy the complete schedule of vaccines as each dose ranging from Rs.280 to Rs.300. Data from preventive clinic shows that patients attending the clinic and ARV used is increasing year by year, adding financial burden for the purchase of ARVs. To address these issues, where vaccine and money are in short supply, ID route is ideal in terms of economic benefits, safety and efficacy. This reduces the cost of vaccination by about 70-80% and this clearly makes an attractive option for resource-starved countries like ours. With commitment and effort, an ideal IDRV vaccine clinic can be set-up. ID administration requires some amount of technical skills which may be imparted by training health inspectors and staff nurses.

### Table 1: Comparison between IM and ID regimen in terms of cost incurred with PVRV

| Vaccines                  | Route | 2006          | 2007          | 2008          | Full course of vaccination* |
|---------------------------|-------|---------------|---------------|---------------|----------------------------|
| Purified vero cell vaccine | IM    | Rs.15,58,480/- | Rs.16,00,760/- | Rs.29,26,820/- | Rs.1,400/-                 |
|                           | ID     | Rs.4,99,800/-  | Rs.5,12,400/-  | Rs.9,36,600/-  | Rs.450/-                   |
| Projected percentage (%)  |       | 67.98         | 67.99         | 67.98         | 67.86                      |

*Full course of vaccination: IM regimen – 5 visits, 5 vials; ID regimen – 0.2ml × 4 visits (0.8ml) (<1ml)

References

1. National Guidelines for Rabies Prophylaxis and Intradermal Administration of Cell Culture Rabies Vaccines, NICD, 2007.
2. Chhabra M, Ichhpujani RL, Bhardwaj M, Tiwari KN, Panda RC, Lal S. Safety and immunogenicity of the intradermal Thai red cross (2-2-2-0-1-1) post exposure vaccination regimen in Indian population using purified chick embryo cell rabies vaccine. Indian J Med Microbiol 2005;23:24-8.
3. 8th Report of WHO-Expert committee on Rabies, Geneva: WHO, (WHO TRS, No. 824); 1992. p. 24-5.

Asma Rahim, Kumaresan Kuppuswamy, Bina Thomas, Lucy Raphael

Department of Community Medicine, Calicut Medical College, Kerala, India.

E-mail: rahim.asma@gmail.com

Received: 09-07-09, Accepted: 27-03-10, DOI: 10.4103/0970-0218.69287