

Cost-Safety-Effectiveness Analysis of Different Methods of Rabies Vaccination

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Dear Editor,

Rabies is a deadly neurological disease. The best prevention is post exposure rabies vaccination (1). In the present day, there are several techniques for vaccine administration. Both intradermal (ID) and intramuscular (IM) administration can be used and different numbers of injection site is applicable. There are some reports comparing the effectiveness of different techniques. The recent publication by Warrell et al. compared several techniques and can be useful for further policy making (2). Nevertheless, the important concern in decision making is "cost" and "effectiveness". In addition, "safety" has to be considered. Here, the author performed an analysis on cost-safety-effectiveness analysis of different methods of rabies vaccination. Data on cost refers to the standard vaccine cost, in US dollar, from the Red Cross Society, Thailand. The effectiveness and safety refer to the published data by Warrell et al. (2). The cost-safety-effectiveness analysis can be defined as cost per safe fraction of vaccine effectiveness, which can be calculated using the following equation:

$$(1) \text{ cost - safety - effectiveness} = \frac{\text{cost}}{[(1 - \% \text{ of adverse effects}) \times \text{effectiveness}]}$$

The data of analysis is shown in Table 1. According to the

analysis, in terms of cost, effectiveness and safety, the 2-site ID regimen is the most favorable method with the lowest cost and highest safe effectiveness.

Table 1. Cost-Safety-Effectiveness Analysis

| Regimens | Cost (USD) ^a | Effectiveness ^b | Percent of Adverse Effects | Cost-Safety-Effectiveness |
|-----------|-------------------------|----------------------------|----------------------------|---------------------------|
| 1-site IM | 30 | 1.33 | 62.5 | 60.15 |
| 2-site ID | 12 | 4.60 | 93.1 | 37.81 |
| 4-site ID | 12 | 2.52 | 100 | Non calculable |
| 8-site ID | 12 | 3.21 | 96.7 | 113.28 |

^aCost in USD, "all ID regimens required the same total amount of vaccine, 60% less than the intramuscular method (2).

^bEffectiveness at 1 year period, refers to mean responsive serological activity (IU/ML).

References

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