

Rotavirus Vaccination Programme is not Only about Costs

Rotavirüs Aşı Programı Sadece Maliyetle İlişkili Değildir

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Rotavirus gastroenteritis is a devastating yet transient disease well known to all pediatricians. The dehydrated baby is miserable and the family is anxious and rightfully concerned. From the pediatrician's perspective it is actually gratifying to treat such a patient: with appropriate fluid therapy-oral or intravenous-the baby quickly recovers and the vomiting and diarrhea subside in a few days. But things may not always go so smoothly, and sometimes a patient may just arrive too late to be rescued. Deaths are rare in Europe and in Turkey, but they may happen, particularly in infants with underlying conditions.

A simple question may be asked: Do tens of thousands of babies in Turkey have to go through this disease every year, if it can be prevented by a simple oral vaccination, which is both effective and safe. The instinctive answer from pediatricians should be that it is better to vaccinate. In fact, in the absence of a national programme, many Turkish pediatricians have been giving rotavirus vaccinations privately for years. However, only a national immunization programme can effectively eliminate the burden of rotavirus gastroenteritis. In Europe, Austria was the first country to introduce universal rotavirus vaccination in 2007. The introduction could be accomplished by the influence of powerful individuals such as Professor Ingomar Mutz, who was involved in early rotavirus vaccine development and had collected burden of disease data. But almost everywhere else cost-effectiveness calculations have been required to guide the decision making process by public health officials and governments.

The outcome of cost-effectiveness analyses are notoriously susceptible to manipulation of variables that are entered into the equation. The greatest unknown is the price. Assuming that the price of rotavirus vaccine purchased for public health programmes would be near the market price, it was concluded that rotavirus vaccination is not cost-effective in European model countries including UK (1). However, in real life, UK will introduce universal rotavirus immunization programme in 2014. Likewise, in Finland cost-effectiveness calculations showed that a universal rotavirus vaccination programme would be only marginally cost-effective (2). Again, however, the tender price for vaccine (RotaTeq™) turned out to be much lower than originally assumed in the calculations, which made the vaccination programme clearly cost-effective.

In the analysis of Hacımustafaoğlu et al. (3) the price of rotavirus vaccine is assumed on the basis of what has been the past experience of other vaccines that have been introduced into the Turkish national immunization programme. This is a good start. However, there is no reason to assume *a priori* that the price for two doses of Rotarix™ and three doses of RotaTeq™ would be different, but on the contrary, as is also seen in the free market price quoted in the article, it is more probable that the prices for full immunization courses of the two vaccines will be more or less equal.

Furthermore, in the absence of rotavirus vaccine efficacy trials in Turkey, it is somewhat arbitrary what vaccine effectiveness figures are inserted in the calculations. Considering this uncertainty, there is not much need to apply different

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effectiveness assumptions for the two vaccines. Real life effectiveness of rotavirus vaccination in Turkey might be like in Latin America (80-85%), but it might also turn out to be similar to Europe (above 90%). In Finland, vaccine effectiveness in the age group targeted for rotavirus vaccination against rotavirus gastroenteritis seen in the hospital (outpatient clinic or hospital admission) was 93% (4).

As the authors note, the present cost-effectiveness analysis does not consider indirect protection of unvaccinated children. The experience in this regard varies by the country, but at a high (95 %) vaccine coverage rate in Finland, a 72% reduction of rotavirus gastroenteritis in children too old to be vaccinated in the national programme was observed (Hemming et al., cited above). Therefore, with added indirect protection, the medical benefits in Turkey of a national rotavirus immunization programme might also be greater than shown by the conservative cost-effectiveness analysis of Hacimustafaoğlu et al. (3). On the other hand, the very conservative approach chosen by the authors shows

that, even without indirect protection, inclusion of rotavirus vaccination into the Turkish national immunization programme would be highly cost-effective. This should give a strong signal to the national decision makers.

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