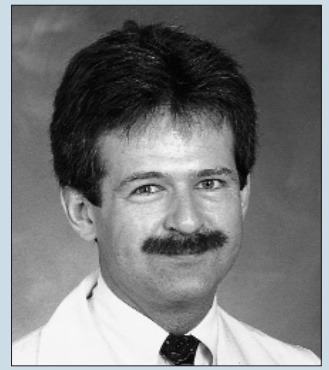


Selective versus Universal Vaccination for Varicella Zoster Virus Infection: What Holds the Key to Successful Disease Control?



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VACCINES REPRESENT WITHOUT question a spectacularly successful strategy for disease control and improvement of public health. However, as more and more immunizations become licensed for use in the clinic, it can sometimes be difficult to know how to prioritize their use. For diseases with life-threatening potential, the choice is easy, and political will rightly drives regulatory mandates for immunization. For infectious diseases that produce less severe disease manifestations, ambivalence can exist, necessitating more abstract analyses based on algorithms which predict cost-effectiveness. Essentially all analyses of the value of vaccines based on cost-effectiveness models have indicated that this investment reaps many benefits, even for diseases which are not intrinsically disabling or life-threatening.

In this issue of *Herpes*, Gialloreti and colleagues present a cost-effectiveness analysis of varicella vaccine programmes, based on an observational survey in the Latium region of Italy (pages 33–37). The live, attenuated varicella vaccine was licensed for use in the USA in 1995, and in Italy in 2001. In the USA, although legal mandates for varicella vaccination vary from state to state, overall compliance nationwide is quite strong. The licensure and widespread implementation of varicella vaccine has accordingly resulted in dramatic nationwide declines in the incidence of disease. In Europe, varicella vaccination programmes have only recently focused on universal immunization mandates. Vaccination of healthy children is now recommended between 12 and 18 months of age, and for teenagers (if susceptible) before their 13th birthday.

The implementation of universal vaccination has varied widely in Europe. Sicily has been one of the first districts in Europe aggressively to carry out mass infant and adolescent vaccination. However, as pointed out by Gialloreti and colleagues, this approach has been somewhat controversial. The Italian Parliamentary Commission for Childhood has expressed its doubts about the appropriateness of this universal immunization approach. The availability of data regarding the economic impact of varicella zoster virus infections in a demographically similar region in Italy where compliance with vaccination is substantially lower, the Latium region, therefore offered a valuable opportunity to analyse the economic impact of varicella infections in an incompletely immunized population.

The economic analysis of the impact of varicella infections in Latium conducted by Gialloreti and colleagues included analyses of the costs associated with physician visits, prescription

medications, hospitalizations and lost work days (for adult patients). The total economic impact of varicella zoster infections (including both chickenpox and herpes zoster) was found to be €10 704 604 annually. These are additional, valuable data providing insights into the costs associated with varicella zoster infection, and provide important baseline information against which to measure the success of vaccination programmes as they become implemented in Latium, and other parts of Europe. Importantly, these data vindicate the aggressive vaccination stance taken in Sicily. The financial costs of varicella zoster virus infections, and the potential severity of disease syndromes caused by this pathogen, are substantial.

The potential severity of varicella infection is underestimated. Varicella can cause significant morbidity and, on occasion, mortality, particularly in association with invasive group A streptococcal infections. Vaccination has had a dramatic impact on varicella-related mortality in the USA.¹ Thus, the impact of routine vaccination in infants and children is substantial, and probably underestimated in the analysis of Gialloreti *et al.* In addition, it has recently been demonstrated that varicella vaccination confers considerable protection against herpes zoster and debilitating post-herpetic neuralgia in older adults.² Thus, aggressive pursuit of universal vaccine programmes is warranted. As the authors point out, the eventual licensure of a combined mumps–measles–rubella–varicella vaccine should result in improved disease control and better herd immunity. In a provocative discussion, Gialloreti and colleagues comment on the need for high coverage rates (over 85%) to effect meaningful disease control. This caution holds all the more resonance in light of the imminent availability of a plethora of new vaccines which will target adolescent patients. These vaccines, which are either approaching licensure or are in clinical trials, include vaccines for human papillomavirus, genital herpes and cytomegalovirus.³ Any potential ambivalence of advisory and regulatory bodies regarding the need for proactive mandates for vaccination in this age group must be tempered and informed by the experience with varicella vaccination. Universal vaccination against varicella is successful, and experience teaches us that elective, selective vaccination against ubiquitous diseases such as varicella is less likely to protect a population than is a universal vaccine strategy. Newly licensed vaccines which target the adolescent population are most likely to impact public health if administered in a similar, proactive and universal fashion.

References

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