To our knowledge this is the first long term analysis of the immunological history of the anti-varicella (VZV) antibody response after varicella/zoster virus (VZV) infection and its vaccination. The present study reports the results of a randomized, controlled, 10-year long varicella vaccine efficacy study conducted in several European countries with no universal varicella vaccination (Figure 1).

- **INTRODUCTION**
  - **Vaccination**
  - **Public Health**
  - **Immunological History**

Varicella cases were defined as follows:
- Clinical:
  - Acute onset of diffuse (generalized) rash with vesicles
- Serologically:
  - Presence of varicella zoster virus (VZV) DNA detected by PCR

**RESULTS**

- **603 children were enrolled**
- **744 included in the ATP cohort for efficacy**
- **Anti-VZV antibody concentrations in the Control group increased over time.**
- **Analysis on children in the according-to-protocol cohort for efficacy who had valid serology results at ≥2 consecutive visits.**
- **Reverse cumulative distribution curves showing increases in anti-VZV antibody concentrations over time in children without confirmed varicella case.**

**CONCLUSIONS**

- **Varicella cases**
- **Anti-VZV antibody concentrations**
- **Analysis on children who did not have varicella cases identified at any assessment visit.**

**METHODS**

- **Varicella seroconversion**
- **Varicella cases**
- **Immunological history**

**Table 1. Varicella case definition: protocol versus US CDC.**

- **Clinical definition**
- **Serologically defined**

**Table 2. Anti-VZV antibody concentrations in children with and without confirmed varicella cases.**

- **Antigen:**
- **VZV DNA detected by PCR**

**Figure 1. Study design and locations of randomized, controlled, long-term varicella vaccine efficacy study (NCT00226499).**

- **Study design:**
- **Randomization**
- **Country, N total (N Control)**

**Figure 2. Of 5803 enrolled children, 744 were included in the ATP cohort for efficacy in the Control group.**

- **Total enrolled cohort (3 groups):**
- **Total enrolled cohort (Control):**

**Figure 3. 352 confirmed varicella cases were captured in the Control group using the algorithm for the classification of varicella cases.**

- **Confirmed cases:**
- **Unconfirmed cases:**

**Figure 4. 353 children in the Control group had no notified varicella case after 10 years.**

- **Varicella cases**
- **Anti-VZV antibody concentrations**

**Figure 5. Anti-VZV antibody concentrations in the Control group increased over time.**

- **Time points:**
- **GMC values:**

**Table 3. 352 confirmed varicella cases were captured in the Control group using the algorithm for the classification of varicella cases.**

- **Varicella cases**
- **Anti-VZV antibody concentrations**

**Figure 6. 353 children in the Control group had no notified varicella case after 10 years.**

- **Varicella cases**
- **Anti-VZV antibody concentrations**

**Figure 7. Reverse cumulative distribution curves showing increases in anti-VZV antibody concentrations over time in children without confirmed varicella case.**

- **Anti-VZV antibody concentrations**
- **Varicella cases**

**Figure 8. Anti-VZV GM-CIs in the Control group by varicella case history.**

- **Children with a varicella case before previous visit**
- **Children with a varicella case before previous visit**

**Figure 9. Anti-VZV GM-CIs in the Control group by varicella case history.**

- **Children with a varicella case before previous visit**
- **Children with a varicella case before previous visit**