Conclusions

- Quadrivalent HPV vaccination seems to have clinical effectiveness as an adjuvant treatment for aggressive recurrent respiratory papilomatosis (RRP), mainly on the recurrence of surgeries.
- Its impact on the clinical staging and increasing time between surgeries was not proven on our population.

Introduction

Juvenile RRP is the most common benign airway neoplasia on the pediatric population, affecting 4.3/100 000 children. It is caused by human papillomavirus (HPV) infection, mainly HPV-6 or HPV-11. The main treatment is surgery but since the disease aggressiveness may lead to multiple interventions or even complete airway obstruction that requires tracheotomy, many adjuvant treatments have been studied to improve disease prognosis.

Since October 2014, Portugal’s National Plan of Vaccination includes a quadrivalent HPV vaccine for the most common high-risk HPV types (16/18), responsible for 70% of cervical cancer cases and HPV related head and neck cancer, as well as two low-risk HPV types (6/11), for girls ages 10-13.

Objectives

To access clinical efficiency of quadrivalent HPV vaccine on children with aggressive RRP

Methods

- Retrospective study of children with RRP
- January 2008 - December 2016
- Children treated with quadrivalent HPV vaccine (Gardasil® - types 6, 11, 16 and 18), off-label, as approved by our Infectiology department
- We analysed, during the year prior to vaccination and during the first year after vaccination.
  - disease staging
  - intervals between surgeries
  - number of surgeries

Results

<table>
<thead>
<tr>
<th>Age at vaccination treatment: 1-13 years</th>
<th>Age at diagnosis: 12 months – 8 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Children with RRP</td>
<td>6 Children treated with quadrivalent HPV vaccine</td>
</tr>
<tr>
<td>3 Children HPV-6</td>
<td>3 Children HPV-11</td>
</tr>
</tbody>
</table>

- Sugaries performed: 6,7 before vaccination; 2,3 after vaccination; p-value: 0,03
- Time between surgeries: 6,4 before vaccination; 10,7 after vaccination; p-value: 0,08
- Decay score (mean): 5 before vaccination; 3 after vaccination; p-value: 0,12

Discussion

Small, non-randomized studies and the peculiar course of RRP, with spontaneous remissions and relapses, make it difficult to demonstrate a direct relationship between adjuvant drugs and improvement of disease course.

Nevertheless, the use of the quadrivalent HPV vaccine, mainly used for cervical and head and neck cancer, seems promising for RRP treatment.

We are interested in studying additional adjuvant therapies for aggressive RRP treatment and are currently studying the impact of intralesional application of Bevacizumab.