CVID are a group of heterogeneous conditions characterized by reduced immunoglobulin levels and absent or poor antibody responses. The latter diagnostic criterion has not been clearly defined leading to a highly variable number and type of immunizations performed among centers. Specific antibody responses cannot be evaluated in patients who are already on immunoglobulin replacement, due to the interference of passively administered IgG. Classification schemes are based on cellular phenotyping and offer instruments for recognition of patients at risk for CVID-associated clinical conditions, but do not take advantage of the possibility to evaluate in vivo antibody responses as a prognostic marker for infectious complications. We immunized 91 CVID patients with a 23-valent pneumococcal polysaccharide vaccine (Pneumovax®) and measured the IgM and IgA to single pneumococcal polysaccharides before vaccination and 4 weeks later. Results were compared with those obtained using a new IgM and IgA anti-pneumococcal polysaccharides 23-valent assay (PC23). We demonstrated that the IgM/ IgA response to FC23 allows stratifying CVID patients into groups with different risk to experience pneumonia and to develop bronchitis. Immunological IgM/IgA responders had the lowest risk for pneumonia (0%) and bronchitis (1.2%), while non responders had the highest risk (57% and 41.5% respectively) and IgM-only responders had an intermediate risk (8.8% and 8% respectively). The antibody response correlated with the frequency of IgMpos and switched memory B cells. The IgM and IgA FC23 assay represents a valuable prognostic tool for CVID patients and allows investigating the residual antibody production capacity, even in patients on substitutive immunoglobulin replacement.

**Abstract 385 Table 1**

<table>
<thead>
<tr>
<th>Neontal morbidity</th>
<th>No. of Infants</th>
<th>Poor Outcome at 5 Years</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>759</td>
<td>11%</td>
<td>9 to 14%</td>
</tr>
<tr>
<td>Any Single Morbidity</td>
<td>590</td>
<td>23%</td>
<td>20 to 27%</td>
</tr>
<tr>
<td>Any 2 Morbidities</td>
<td>139</td>
<td>44%</td>
<td>36 to 53%</td>
</tr>
<tr>
<td>All 3 Morbidities</td>
<td>26</td>
<td>62%</td>
<td>41 to 80%</td>
</tr>
</tbody>
</table>

**Conclusion**

Resuscitation of preterm infants at birth with 30% oxygen is as safe as resuscitation with 65%, but does not offer benefits with regard to survival without BPD.

**Abstract 386**

A COUNT OF THREE NEONATAL MORBIDITIES MAY SUBSTITUTE FOR LONG-TERM NEURODEVELOPMENTAL FOLLOW-UP IN VERY LOW BIRTH WEIGHT (VLBW) INFANTS

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**Background**

In very preterm infants who survive to a postmenstrual age (PMA) of 36 weeks, a count of BPD, brain injury and severe ROP predicts the risk of a later death or neurosensory impairment at 18 months (JAMA 2003; 289:1124).

**Objective**

To validate this count of 3 neonatal morbidities as a predictor of poor long-term outcome in VLBW infants who participated in the CAP Trial.

**Methods**

Five-year follow-up of 1514 CAP trial participants who survived to a PMA of 36 weeks. Poor outcome was a late death or survival with one or more disabilities.

**Results**

The incidences of BPD, brain injury and severe ROP were 15%, 16%, and 6.0%, respectively. Each morbidity was similarly and independently correlated with a poor 5-year outcome. Table 1 shows the risks of a poor long-term outcome with none, any 1, any 2, and all 3 neonatal morbidities.

**Abstract 386 Table 1**

**Conclusions**

In VLBW infants who survive to a PMA of 36 weeks, a count of BPD, brain injury and severe ROP predicts the risk of a later death or survival with disability at age 5 years. This morbidity count may substitute for long-term outcome assessments in very preterm infants whose families do not comply with neurodevelopmental follow up.