group [142 ± 44 mmHg]. After the onset of mechanical ventilation, PaO₂ was 90 ± 28 mmHg in the CON group, 118 ± 48 mmHg in the NPPV group (p = 0.035 vs. CON group), and 211 ± 59 mmHg in the NPPV+RM group (p < 0.0001 vs. NPPV group). After ETI, EELV was higher in the NPPV group compared with the CON group (p < 0.001). Compared with NPPV alone, RM further improved gas exchange and EELV (all p < 0.05). A significant correlation was found between PaO₂ obtained 5 min after mechanical ventilation and EELV (R = 0.41, p < 0.001).

**Conclusion** NPPV improves oxygenation and EELV in children with higher lever intra-abdominal pressure compared with conventional preoxygenation. NPPV combined with early RM is more effective than NPPV alone at improving respiratory function after ETI.

**Methods** Retrospective study conducted between May–September 2013, in 0–5 years old patients hospitalised for AD with SAD and MA. We chose the propitious age group and season for acute gastrointestinal pathology. We considered SAD loss >10% of body weight and severe MA pH <7.2 and bicarbonate <15 mmol/L. Not included patients with associated pathology. Were studied 43 medical records; blood gases (BG) assessed at admission, 1 h (1H) and 4 h (4H). 31 patients received SB (7–2meq/kg dose – A Group, 24–1 meq/kg – B Group) and 12 not (C Group).

**Results** In A Group, at admission, 57.14% presented pH <7.2, 100% bicarbonate <15; at 1 H, all presented normal pH and bicarbonate >15; at 4 H, all presented alkalosis. In B Group, at admission, 50% presented severe MA; at 1 H, 25% presented alkalemia, 50% bicarbonate <15; at 4 H, 25% presented alkalosis. In C Group, at admission, 50% presented bicarbonate <15; starting with 1 H, 91.66% presented normal BG.

86.04% presented respiratory compensation (RC), pCO₂ around 20 mmHg. Percentage of patients which developed alkalosis was significantly greater in A than B Group (p 0.004); no significance between C and B Group (p 0.57).

**Conclusions** In choosing the bicarbonate dose in metabolic acidosis, the physician should consider also the RC, especially at 2 meq/kg dose.