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| **Study reference** | **Study characteristics** | **Patient characteristics 2** | **Intervention (I)** | **Comparison / control (C) 3** | **Follow-up** | **Outcome measures and effect size 4** | **Comments** |
| Jaquet-Pilloud, 2020 | Type of study:  RCT  Setting and country:  - Inpatients  - Switzerland  Funding and conflicts of interest:  Funding: The authors have not declared a specific grant for this research from any  funding agency in the public, commercial or not-for-profit sectors.  Competing interests: None declared. | Inclusion criteria:  Eligible patients included children aged from 6 weeks up to 24  months coming to the emergency department (ED) with a first  episode of acute bronchiolitis, defined as symptoms of upper  respiratory tract infection in addition to tachypnoea, wheezing  and widespread crackles at auscultation. Further inclusion  criteria were a Wang Score of 5–12 (moderate to severe) on  arrival.  Exclusion criteria:  Exclusion criteria were children with mild bronchiolitis (Wang  Score <5), previous episodes of wheezing, cardiac or chronic  respiratory disease, immunocompromised children, gestational  age <34 weeks and children with critical illness requiring  immediate admission to intensive care unit (ICU). Children  who received RSV immunoglobulin therapy, corticotherapy in  any form in the preceding 2 weeks or bronchodilators within  24 hours prior to presentation, were also excluded.  N total at baseline:  - 122 were randomized  - 120 in analyses  Intervention:  61 randomized, 60 in analyses  Control:  61 randomized, 60 in analyses  Important prognostic factors2:  *age Mean months (95% CI):*  I: 7.7 (6.4; 9.1)  C: 7.5 (6.2; 8.9)  *Sex % M:*  I: 39 (64%)  C: 37 (63%)  *Wang severity score, N (%)*  I: 15 (24%)  C: 14 (23%)  *Wang severity score, N (%)*  I: 46 (76%)  C: 45 (77%)  Groups comparable at baseline?  yes | HS 3% Group received 4 mL of NaCl 3% (MucoClear 3%) every 6 hours until discharge in addition to standard care.  Standard therapy  includes suctioning nasal secretions, water-electrolyte balance  maintenance and oxygen supplementation when needed.  If any child showed signs of respiratory failure including  either persistent major respiratory distress, signs of exhaustion  with a partial pressure of carbon dioxide above >50 mm Hg on the capillary blood gas, a nebulisation of 4 mg of epinephrine  was given.  Nebulised epinephrine could be administered up to three  times within the hour. If respiratory failure continued despite a total of three nebulisations  of epinephrine / in the absence of response, the patient was  admitted to ICU. | Standard Care group with no inhalation.  Standard therapy  includes suctioning nasal secretions, water-electrolyte balance  maintenance and oxygen supplementation when needed.  If any child showed signs of respiratory failure including  either persistent major respiratory distress, signs of exhaustion  with a partial pressure of carbon dioxide above >50 mm Hg on the capillary blood gas, a nebulisation of 4 mg of epinephrine  was given.  Nebulised epinephrine could be administered up to three  times within the hour. If respiratory failure continued despite a total of three nebulisations  of epinephrine / in the absence of response, the patient was  admitted to ICU. | Length of follow-up:  Readmission rate in the next 7 days following  discharge from hospital was studied.  Loss-to-follow-up:  None  Incomplete data:  HS was discontinued in 10 patients at parents’ request (sleep preservation (n=5), agitation with the inhalation facemask  (n=5).  **Two patients were excluded after randomisation**, one for misdiagnosis (pneumonia) and the other for decompensation of  an unknown neurological disease and excluded from the intention to treat analyses. | Hospital LOS (hours), Mean (95% CI)  I: 47 (39; 56)  C: 50.4 (39; 61)  Difference -2.8 (-11; 16)  p=0.33  Duration oxygen therapy (hours), mean (95% CI)  I: 29.5 (22; 36)  C: 31.1 (22; 39)  Difference -1.5 (-9.6; 12)  p=0.6  Transfers to PICU, N (%)  I: 0 (0%)  C: 3 (5%)  RR: 0.138 (95%CI 0.007; 2.620)  p=0.187  Racemic epinephrine nebulisation rescue therapy, N (%)  I: 5 (8.2)  C (9 (15%)  RR: 0.537 (95%CI 0.191; 1.510)  p=0.239 | No serious adverse events were observed (bronchospasm, excessive  coughing, infection, apnoea and cyanosis) during the study.  Authors report: Sixty-one patients were allocated to the intervention group  (HS) and 61 were allocated to the control group (standard care alone). One hundred and twenty patients completed the whole study.  However, all Tables in article state that the HS group analyses were with n=61 and the standard care group with n=59 **=> included N is unclea**r.  Article conclusion: There were no differences in oxygen therapy duration, transfer to ICU, readmission rate or adverse events. Study does not support the use of  HS nebulisation in children with moderate to severe  bronchiolitis. |