Table S1: Summary of High Flow Nasal Cannula Utilization in Published Randomized Controlled Trials

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Reference** | **Country** | **Location** | **No.** | **Control** | **Device** | **Initial flow** | **Flow adjust** | **actual flow rate** | **Actual FiO2** | **Target SpO2** |
| HFNC use for acute hypoxemia to avoid intubation | 2017, Makdee1 | Thailand | ED | 136 | COT | Optiflow/ Airvo | 35 | 60 | NM | .50  | >95% |
| 2017, Delorme2 | Canada | NM | 12 | COT | Airvo2 | NM | 20/40/60 | NM | .46/.40/ .40 | 90%/94% |
| 2016, Jones3 | NZ | ED | 303 | COT | Optiflow/ Airvo | 40 | NM | NM | .28 | >93% |
| 2015, Rittayamai4 | Thailand | ED | 40 | COT | Optiflow | NM | 35 | 35.5 | .45 | >94% |
| 2015, Frat5 | France | ICU | 310 | COT/NIV | Optiflow | NM | 50 | 48 | .82 | >92% |
| 2012, Cuquemelle6 | France | IMCU | 30 | COT | Optiflow | NM | depend on SpO2 | NM | NM | >95% |
| Post-extubation | 2019, Thille7 | France | ICU | 641 | HFNC+NIV | NM | 50 | 50 | 50 | 0.41 | ≥ 92% |
| 2019, Gaspari8 | Italy  | ICU | 58 | COT | Servo U | NM | 50 | 50 | NM | ≥ 93% |
| 2018, Di mussi9 | Italy | ICU | 28 | Face mask | Airvo  | 20 | 20-60 | NM | .46 | 88-92% |
| 2017, Song10 | China | ICU | 46 | Venturi mask | Airvo2 | 60 | decrease 5-10 | 36.8  | NM | 94–98% |
| 2016, Hernandez11 | Spain | ICU | 604 | NIV | Optiflow | 10 | increase by 5 | 50 | .35 | >92% |
| 2016, Hernandez12 | Spain | ICU | 527 | COT | Optiflow | 10 | increase by 5 | 30.9  | .32 | >92% |
| 2014, Maggiore13 | Italy | ICU | 105 | Venturi mask | Optiflow | NM | 50 | NM | .38 ± .07 | 92-98% |
| 2014, Rittayamai14 | Thailand | ICU | 17 | COT | Optiflow | NM | 35 | NM | NM | 94% |
| Prophylactic use of HFNC for post-surgical patients  | 2020, Vourc’h15 | France | ICU | 90 | COT | Optiflow | 45 | 45 | NM | 1.0 | NM |
| 2020, Tatsuishi16 | Japan | ICU | 148 | COT | NM | 45 | 45-60 | NM | 0.21-0.35 | >90% |
| 2019, Pennisi17 | Italy | ICU | 95 | Venturi mask | Airvo  | 50 | 50 | 50 | 0.39 | 92-98% |
| 2018, Sahin18 | Turkey | ICU | 100 | Simple mask | Optiflow/ Vapotherm | 25-40 | NM | NM | NM | >93% |
| 2018, Zochios19 | UK | ICU | 100 | COT | NM | 30 | 20-50 | NM | NM | ≥ 93% |
| 2017, Brainard20 | USA | ICU | 44 | COT | Optiflow | 40 | NM | NM | NM | ≥ 90% |
| 2017, Yu21 | China | ICU | 110 | COT | Optiflow | NM | 35-60 | NM | NM | >95% |
| 2016, Futier22 | France | NM | 220 | COT | Optiflow | NM | 50-60 | NM | NM | >95% |
| 2016,Ansari23 | UK | Post OR | 68 | COT | Optiflow | 50 | 20-50 | NM | NM | >93% |
| 2015, Corley24 | Australia | ICU | 155 | COT | Optiflow | 35 | Maximum of 50 | NM | NM | ≥ 95% |
| 2013, Parke25 | Australia | ICU | 340 | COT | Optiflow | NM | 45 | NM | NM | >93% |
| HFNC use to assist intubation  | 2019, Guitton26 | France | ICU | 184 | COT | Airvo  | 60 | 60 | 60 | 1.0 | NM |
| 2019, Vourc’h27 | France | OR | 100 | NIV | Optiflow | 60 | 60 | NM | 1.0 | NM |
| 2019, Frat28 | France | ICU | 313 | NIV | NM | 60 | NM | 60 | 1.0 | NM |
| 2016, Simon29 | Germany | ICU | 40 | COT | Resuscitator  | 50 | NM | 50 | 1.0 | NM |
| 2016, Jaber30 | France | ICU | 49 | NIV | Optiflow | NM | 60 | NM | NM | NM |
| 2015, Vourc’h31 | France | ICU | 119 | COT | Optiflow | 60 | NM | 60 | 1.0 | NM |
| HFNC use during bronchoscopy | 2019, Saksitthichok32 | Thailand | IMCU | 51 | NIV | Airvo  | NM | 40 | 40 | 0.6 | NM |
| 2018, Douglas33 | Australia | Bronch | 60 | COT | Optiflow | 30 | 30-70 | 50 | 1.0 | NM |
| 2014, Simon34 | Germany | ICU | 40 | NIV  | Optiflow | NM | 50 | NM | NM | >90% |
| Stable COPD | 2019, Braunlich35 | Germany | Unit  | 94 | NIV | TNI 20 oxy  | 20 | 20 | 20 | 0.29 | NM |
| 2018, Mckinstry36 | NZ | Lab | 48 | Room air | Airvo2 | NM | 15-30-45 | 15-30-45 | 0.21 | NM |
| 2018, Storgaard37 | Denmark | Home | 200 | COT | Airvo orOptiflow | 15 | 20 | NM | NM | NM |
| 2016, Fraser38 | Australia | NM | 30 | COT | Airvo | NM | 30 | NM | NM | NM |
| COPD post-extubation | 2020, Tan39 | China  | ICU | 96 | NIV | Airvo2 | 50 | NM | NM | 0.32 | 88-92% |
| 2019, Jing40 | China | ICU | 42 | NIV | Optiflow or Airvo2 | 50 | NM | 52 | 0.4 | 88-92% |
| COPD exacerbation  | 2020, Li41 | China  | General wards | 320 | COT | Airvo2 | NM | 27 | 38 | 0.25 | 90-93% |
| 2019, Longhini42 | Italy | ICU | 30 | COT | Optiflow  | NM | 50 | 50 | NM | 90-94% |
| 2019, Mckinstry43 | NZ | Lab | 24 | NIV | Airvo2 | NM | 45 | 45 | NM | 88-92% |
| 2019, Sun44 | China | ICU | 72 | NIV | Optiflow | NM | NM | 50 | 0.3 | NM |
| 2018, Lee45 | Korea | Unit | 88 | NIV | Optiflow  | 35 | 45-60 | NM | NM | 92% |

FIO2, fraction of inspired oxygen; SpO2, spirometry of pulse oximetry; ICU, intensive care unit; ED, emergency department; OR, operating room; COPD, chronic obstructive pulmonary disease; COT, conventional oxygen therapy; HFNC, high-flow nasal cannula; NIV, noninvasive ventilation; NM, not mentioned; IMCU, intermediate care unit; UK, United Kingdom; NZ, New Zealand.

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