

2015

Оглавление

.....	3
.....	6
-10	7
.....	7
.....	7
.....	9
.....	7
.....	11
.....	18
.....	30
.....	31

XVII

«

»

15

2014 .,

,

XVIII

«

» 14

2015 .

: . . , - . .
 - , . . , ,
 , , , , ,
 , , , , ,
 , , , , ,

/

,

.

,

/

:

.

,

:

,

EMBASE, MEDLINE PubMed.

- 5 .

,

:

•

;

•

,

:

•

-

;

•

.

,

(Good Practice Points – GPPs)

-
-

()

(1-2)

(-)

(. 1) – good practice points (GPPs)

(. 1).

1			
1			
1			
2			
2			

2	,	,	;
---	---	---	---

(,).

().

[1].

() -

() /

-10:

P27.1

, .

:

()

/

(NCPAP) ;

21% (FiO₂>21%) 28 () ;

, 28 ,

, (, NCPAP).

,

, , .

, 36 .

(- ,

) , 32

, 56 32

, (1) [2] (. 2).

2
[3]

	32	32
	36	28 56
	()	()
	21%	28 *
	36	56
	30% 36 .	30%
	30% / PPV**, NCPAP*** 36	56 / PPV**, NCPAP*** 56

*

12

** PPV (positive pressure ventilation) –

***NCPAP (nose continuous positive airway pressure) –

(PPV NCPAP) 36 (FiO₂>21%) / 56 «

», , (FiO₂>21%) / , (. .) , , (, , ,) [3].

« » , SatO₂, (36 /56 ,) **(2B)**. SatO₂ 90%, , — , . « » , , ²>30% 36 SatO₂ 90-96% . , SatO₂>96% ²>30% (FiO₂ <30%) (%) ² SatO₂. , , 30 . SatO₂ >89%, [4]. (ATS) , , (,) , (.) [5]. (,) . , ,

SatO₂

()

PaO₂ SatO₂.

(. 3) [6].

II

(1).

3.
[6].

	PaO ₂ . . .	SaO ₂ %
	80	95
I	60 – 79	90 – 94
II	40 – 59	75 – 89
III	< 40	< 75

« , , , , ».

28

28

« » «

».

« »

3-

3

(. 4).

. 4

4.
[7].

(< 2500)	/	(, , ,)

28 ;

(75%)

1000 .

« » -

()

« »

« ».

5.

5.
[7].

	()	()
	« »	,
	- ,	,

	(,) ,	, () ; « »
		24-28
		400-1000
	,	,
	3-6 , FiO ₂ >0,5, PIP MAP	CPAP FiO ₂ 0,3-0,4, PIP MAP
		(« » -) , « »
	,	(« »), ,

(*Streptococcus agalactiae*).

7-10

(« »)

,

,

[8].

[9].

,

().

3-4-

,

1-2 ,

;

-

, « »

(1) [7].

100

« » (

),

80-

()

,

,

,

,

,

,

.

,

,

.

,

.

,

,

,

,

.

,

,

II

,

,

.

,

,

6.

6.

	()
-	

(. 7),

36

6

(2C) [10].

(A. Greenough . (1999),

7) [10]

	0	1	2	3	4
*	<14	14-16	>16		

/		1	2	3	4
**			/		

*

**

(1/2

)

1-2

;

«

» -

()

:

1)

, , ;

2)

;

3)

, ;

4)

, ;

5)

-

(.8) [11].

8.

	0-1	2	3
		,	,
	,	,	,
		,	,
		,	,
-		,	
:		,	

	1 – 5	6 – 10	11 – 15

(1C).

2- -

[12].

2

PaCO₂

PaO₂

() .

(2C).

(ESC)

(ERS)

(2009),

() 37 – 50

2,9

, , , , , , .

(26)

/ e FiO_2 .

/ 36 . ,

(2) [15].

() 25 . .

>3.0

(WU) · ²

[16].

:

1)

2)

3)

4)

5)

6)

7)

();

8)

[13, 14].

« » ,

5-10-

$\text{FiO}_2 > 0,8$

() ,
.

,

().

-

, , [17].

()

, [18].

(, ,)

),

(,

(),

/

/

· () ,
(« ») ,
· () ,
C 19 ,
· C ,
· C ,
() ,
· () ,
[19,20].
· (28) .
· () ,

, , ,
, ,),
.
, ,
,
PAP/ INSURE.
,
/ [21-23].

INSURE (-
(INTubate – SURfactant – Extubate to CPAP):

[24, 25] **(1B)**.

28

CPAP
(NIPPV)

[26] **(2B)**.

[26] **(1)**.

[27, 28].

[26] **(2)**.

7,22 [26] **(2)**.

[26, 29] **(2)**.

(1).

(« »).

() [30, 31] (2).
SatO₂ 90% 2
27
[32, 33]
SatO₂ 90-95% [24] (2). SatO₂
90 95% 2 45 100 . . .
FiO₂.

SatO₂ [26] (2).
[13].
FiO₂,

[14] (2).
SatO₂ < 94% [13] (2).
SatO₂<92-94% 2<60

(« »)
[14].

(15 /)
« »).

[5].
SatO₂
[34].

SatO₂ <92%.

SatO₂ 92-94%

6

[35] (2).

() ,

().

:

1.

Sat₂ 90-95% ,

/

92-94% .

Sat₂

2.

Sat₂

10

2

3.

SatO₂

90%

40

4.

Sat₂

Sat₂

Sat₂

5.

(<15-30 /) ,

6.

7.

[34].

[36, 37] (2).

[26] (2).

1250 ,

[26] (2).

(: , : *N06BC01*),

/ 20 /

5 /

1-2

<1250 ,

5 /

10 / .

33-35

>180

10 / 5 / ,

() -

FiO₂

(: *H02AB02*)

7-14

(

)

(

)

7-10

[38-40].

[26] (1).

7

; 2) ; 3) $FiO_2 > 35-50\%$; 4) ; 5) MAP > 7-10 ; 6) [41].

; 2) ; 3) (8,6 / , 2000 . - 7 /); 4) ; 5)

[41].

0,15 / / (1-3), 4-6 0,1 / / , 7-8 0,05 / / , 9-10 0,02 / / 0,89 / [42, 43] (2). 3

0,1 / / , 0,3 / / 3 , FiO_2 PIP,

H02AB09),

[41].

[44].

().

[45-48].

: R03BA02)

()

[49],

[50].

«off label» (

6

: 1)

56

; 3)

; 5)

; 6)

« »

3

2

3 , - .
 () 500 / .
 () , (3)
 .
 , (,).
 .
 (, : R03AC02), (2-
 , : R03BB01) : + (:
 R03AK03).

2- , [51]
 (1C).

[52] (1).

[53,54].

0,1 (2 .) + «off label» .
 25 . : 1 . / / 50 2 0,9%
 NaCl. 6-8 ,

+ .
 + : , , ,
 , , , (,
 ,), - ,
 . , + ,

[41].

(2C).

[55].

SatO₂

[56, 57].

SatO₂)

[58, 26] (2).

(: J06BB16).

IgG₁,

A

(F) -

[59] (2A)

[60].

[61].

6

35

2

6

(

);

2

(2A).

/ ,
1 . ,
/ ,
3 .
5 , (- -) .
- 3-5 .
(: G04BE03).
NO
«off label»
1 8 / / . [62,63,64].
[65].
(The U.S. Food and
Drug Administration - FDA), 2012
. 9

(Caffeine citrate)	
) (

, SatO₂ 90%

,

,

-

.

,

.

SatO₂ <90% (SatO₂<92%)

-

,

- (),

[1,66].

(2A).

,

(),

48-72

,

[66].

(,)

, SatO₂,
 / .
 3-
 (1-2 ,
 , ,
 - ,
 -),
 ,
 2 – 3 . 3 , ,
 . 5 ,
 , ,
 , - -
 .
 4,1%
 , 1,2-2,6% [7, 67].
 - ().
 ,
 : (15-60%),
 (8-65%), (21-
 23%), (4%), (13-43%), (25-
 40%) [7, 64].
 6 ; ; / ;
 [68, 69].
 , ,
 , ,
 ().
 - , ,

, (,)
 , .
 -
 [70].

:
 («off label»)

14 .

- NCPAP* Nose Continuous Positive Airway Pressure –
- ERS*
- ESC*
- FiO₂* Fraction of inspired oxygen –
- INSURE* INTubate – SURfactant – Extubate to CPAP - - -
- Mean airway pressure - c)
- NO*
- ²
PIP Peak inspiratory pressure -
- PPV* Positive pressure ventilation -
- SatO₂*

1., 2013: 176 .
2. Ehrenkranz R. A., et al. Validation of National Institutes of Health Consensus Definition of Bronchopulmonary dysplasia. *Pediatrics*. 2005; 116: 1353-60.
3. Jobe A. H., Bancalari E. Bronchopulmonary dysplasia. *m. J. Respir. Crit. Care Med*. 2001; 163: 1723 – 29.
4. Walsh M., Yao Q., Gettner P., et al. Impact of a physiologic definition on bronchopulmonary dysplasia rates. *Pediatrics* 2004; 114: 1305- 11.
5. Allen J., Zwerdling R., Ehrenkranz R. et al. American Thoracic Society. Statement on the care of the child with chronic lung disease of infancy and childhood. *Am. J. Respir. Crit. Care Med*. 2003; 168: 356-96.
6., 2007. . 2: 658-68.
7., 2010: 152.
8. Charafeddine L., D'Angio C. T., Phelps D. L. Atypical chronic lung disease patterns in neonates. *Pediatrics*. 1999; 103: 759-65.
9. Bancalari E, Claire N, Sosenko IRS. Bronchopulmonary dysplasia: changes in pathogenesis, epidemiology, and definition. *Semin Neonatol* 2003; 8:63-71.
10. Greenough A., Kavvadia K., Johnson A. H. et al. A new simple chest radiograph score to predict chronic lung disease in prematurely born infants. *British J. Radiol*. 1999; 72: 530-3.
11. 2401066 « 10.10.2010.
12.IV. /, 2004: 234-76.
13. Galie N, Hoepfer M, Humbert M. Guidelines for the diagnosis and treatment of pulmonary hypertension. *European Heart Journal*. 2009; 30 (20): 2493–537.
14. Abman S H Approach to the child with pulmonary hypertension and bronchopulmonary dysplasia. *Advances in pulmonary hypertension*. 2011; 10 (2): 98-103.
15. 2013; 5 (4): 5-13.
16. Cerro M J, Abman S, Diaz G, et al. A consensus approach to the classification of pediatric pulmonary hypertensive vascular disease: Report from the PVRI Pediatric Taskforce, Panama 2011. *Pulm Circ*. 2011;1(2):286-298.
17. 2009; 87 (1): 13-18.

18. , 2012: 32 .
19. , 2011:680.
20. 2014; 93 (1): 38-42.
21. SUPPORT Study Group of the Eunice Kennedy Shriver NICHD Neonatal Research Network, Finer NN, Carlo WA, Walsh MC, Rich W, Gantz MG, Laptook AR, Yoder BA, et al: Early CPAP versus surfactant in extremely preterm infants. *N Engl J Med* 2010; 362: 1970–79.
22. Sandri F, Plavka R, Ancora G, et al. CURPAP Study Group: Prophylactic or early selective surfactant combined with nCPAP in very preterm infants. *Pediatrics* 2010; 125:e1402–e1409
23. Rojas-Reyes MX, Morley CJ, Soll R: Prophylactic versus selective use of surfactant in preventing morbidity and mortality in preterm infants. *Cochrane Database Syst Rev* 2012:CD000510
24. Stevens TP, Harrington EW, Blennow M, Soll RF: Early surfactant administration with brief ventilation vs. selective surfactant and continued mechanical ventilation for preterm infants with or at risk for respiratory distress syndrome. *Cochrane Database Syst Rev* 2007:CD003063
25. Verder H, Robertson B, Greisen G, et al. Surfactant therapy and nasal continuous positive airway pressure for newborns with respiratory distress syndrome. Danish-Swedish Multicenter Study Group. *N Engl J Med* 1994; 331: 1051–55
26. Sweet DG, Carnielli V, Greisen G, Hallman M, et al. European consensus guidelines on the management of neonatal respiratory distress syndrome in preterm infants – 2013 update. *Neonatology* 2013; 103:353-68.
27. Morley CJ: Volume-limited and volumetargeted ventilation. *Clin Perinatol* 2012; 39: 513–23.
28. Wheeler K, Klingenberg C, McCallion N, et al. Volume-targeted versus pressure-limited ventilation in the neonate. *Cochrane Database Syst Rev* 2010:CD003666
29. Erickson SJ, Graaug A, Gurrin L, Swaminathan M: Hypocarbia in the ventilated preterm infant and its effect on intraventricular haemorrhage and bronchopulmonary dysplasia *J Paediatr Child Health* 2002; 38: 560– 562
30. The STOP-ROP Multicenter Study Group. Supplemental therapeutic oxygen for prethreshold retinopathy of prematurity, a randomized, controlled trial. *Pediatrics* 2000;105:295-310.
31. Askie L.M., Henderson-Smart D.J., Irwig L. et al. Oxygen saturation targets and outcomes in extremely preterm infants. *N. Engl. J. Med.* 2003; 349: 959–67.
32. SUPPORT Study Group of the Eunice Kennedy Shriver NICHD Neonatal Research Network, Carlo WA, Finer NN, Walsh MC, Rich W, Gantz MG, Laptook AR, et al: Target ranges of oxygen saturation in extremely preterm infants. *N Engl J Med* 2010; 362: 1959–69.
33. Stenson B, Brocklehurst P, Tarnow-Mordi W: Increased 36-week survival with high oxygen saturation target in extremely preterm infants *N Engl J Med* 2011; 364: 1680–1682
34. Nieves F F, Chernick V. Bronchopulmonary dysplasia: an update for the pediatrician. *Clin. Pediatr.* 2002; 41: 77–85.
35. 2005; 5: 13-34.
36. Schmidt B, Roberts RS, Davis P, et al. Caffeine for Apnea of Prematurity Trial Group: Caffeine therapy for apnea of prematurity *N Engl J Med* 2006; 354: 2112–21.
37. Henderson-Smart DJ, Davis PG: Prophylactic methylxanthines for endotracheal extubation in preterm infants. *Cochrane Database Syst Rev* 2010:CD000139
38. Halliday HL, Ehrenkranz RA, Doyle LW: Early (<8 days) postnatal corticosteroids for preventing chronic lung disease in preterm infants. *Cochrane Database Syst Rev* 2010:CD001146
39. Halliday HL, Ehrenkranz RA, Doyle LW: Late (>7 days) postnatal corticosteroids for chronic lung disease in preterm infants. *Cochrane Database Syst Rev* 2009:CD001145
40. Doyle LW, Halliday HL, Ehrenkranz RA, Davis PG, Sinclair JC: Impact of postnatal systemic corticosteroids on mortality and cerebral palsy in preterm infants: effect modification by risk for chronic lung disease *Pediatrics* 2005; 115: 655–661
41. , 2010: 56.
42. Doyle LW, Davis PG, Morley CJ, et al. Low-Dose Dexamethasone Facilitates Extubation Among Chronically Ventilator-Dependent Infants: A Multicenter, International, Randomized, Controlled Trial. *Pediatrics.* 2006; 117:75-83.
43. Onland W, Offringa M, Jaegere A. P. De, van Kaam AH. Finding the Optimal Postnatal Dexamethasone Regimen for Preterm Infants at Risk of Bronchopulmonary Dysplasia: A Systematic Review of Placebo-Controlled Trials. *Pediatrics.* 2009; 123 (1):367-77.
44. Kersbergen K.J., de Vries L.S., von Kooij B.J. et al. Hydrocortisone treatment for bronchopulmonary dysplasia and brain volumes in preterm infants: *J. Pediatr.* 2013; 163 (3): 666-671.
45. Shah S.S., Ohlsson A., Halliday H., Shah V.S. Inhaled versus systemic corticosteroids for the treatment of chronic lung disease in ventilated very low birth weight preterm infants. *Cochrane review in The Cochrane Library* 2003, Issue 3. <http://www.nichd.nih.gov/cochraneneonatal/Shah8/Shah.htm>
46. Shah V.S., Ohlsson A., Halliday H.L., Dunn M.S. Early administration of inhaled corticosteroids for preventing chronic lung disease in ventilated very low birth weight preterm neonates. *Cochrane review in The Cochrane Library* 2003, Issue 3. <http://www.nichd.nih.gov/cochraneneonatal/shah2/Shah.htm>
47. Dugas M. A., Nguyen D., Frenette L., et al. Fluticasone inhalation in moderate cases of bronchopulmonary dysplasia.

- Pediatrics. 2005; 115: 566-572.
48. Pantalitschka T., Poets C. F. Inhaled drugs for the prevent and treatment of bronchopulmonary dysplasia. *Pediatr. Pulmonol.* 2006; 41: 703-8.
49. 2008; 4: 10-6.
50. 2009; 4: 80-84.
51. Ng G.Y.T., da Silva O., Ohlsson A. Bronchodilation for the prevention and treatment of chronic lung disease in preterm infants. *Cochrane Database Syst. Rev.* 2001; 23: CD003214.
52. Yuksel B., Greenough A., Maconachie I. Effective bronchodilator therapy by a simple spacer device for wheezy premature infants in the first two years of life. *Arch. Dis. Child.* 1990; 65: 782–85.
53. Wilkie R. A., Bryan M. H. Effect of bronchodilators on airway resistance in ventilator-dependent neonates with chronic lung disease. *J. Pediatr.* 1987. 111; 2: 278-282.
54. 2004: 177-190.
55. American Academy of Pediatrics Subcommittee on Diagnosis and Management of Bronchiolitis. Diagnosis and management of bronchiolitis. *Pediatrics* 2006;118:1774-93.
56. Schweich PJ, Hurt TL, Walkley EI, Mullen N, Archibald LF. The use of nebulized albuterol in wheezing infants. *Pediatr Emerg Care* 1992;8:184-8.
57. Schuh S, Canny G, Reisman JJ, Kerem E, Bentur L, Petric M et al. Nebulized albuterol in acute bronchiolitis. *J Pediatr* 1990;117:633-7.
58. Pandit PB, Dunn MS, Kelly EN, Perlman M: Surfactant replacement in neonates with early chronic lung disease. *Pediatrics* 1995; 95: 851–4.
59. Checchia P.A., Nalysnyk L., Fernandes A. W., et al. Mortality and morbidity among infants at high risk for severe respiratory syncytial virus infection receiving prophylaxis with palivizumab: A systematic literature review and meta-analysis. *Pediatr Crit Care Med.* 2011; 12 (5): 580-8.
60. 2012/2013 2013; 10 (6): 17-26.
61. 2012; 9(6): 48-52.
62. 2006. 2006: 332.
63. Mourani P M, Sontag M K, Dunbar Ivy D, et al. Effects of Long-term Sildenafil Treatment for Pulmonary Hypertension in Infants with Chronic Lung Disease. *J Pediatr.* 2009; 154(3): 379–384.e2.
64. 2013; 5: 32-39.
65. Steinhorn RH, Kinsella JP, Pierce C, et al. Intravenous sildenafil in the treatment of neonates with persistent pulmonary hypertension. *J Pediatr.* 2009; 155: 841.
66. 2013; 10 (4): 30-6.
67. Tommiska V., Heinonen K., Kero P., et al. A national two year follow up study of extremely low birthweight infants born in 1996-1997. *Arch. Dis. Child. Fetal. Neonatal.* Ed 2003;88:F29.
68. 1. « », 2009: 371-99.
69. Khemani E, McElhinney D B, Rhein L, et al. Pulmonary artery hypertension in formerly premature infants with bronchopulmonary dysplasia: clinical features and outcomes in the surfactant era. *Pediatrics.* 2007;120(6):1260-69.
70. 2013; 5 (1): 5-11.