GUIDELINES ON

MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH

approved by the

WHO GUIDELINES REVIEW COMMITTEE

Recommendations on newborn health

World Health Organization

Contents

Abbreviations

GRADE	Grading of recommendations, assessment, development and evaluation
GRC	Guidelines Review Committee
HIV	human immunodeficiency virus
IM	intramuscular
i.u.	international units
IV	intravenous
kg	kilogram
LBW	low birth weight
mg	milligram
NVP	nevirapine
VBLW	very low birth weight
WHO	World Health Organization

Introduction

This publication on recommendations related to newborn health is one of four in a series; the others relate to child, adolescent and maternal health. The documents are meant to respond to the questions:

- What health interventions should the pregnant woman, mother, newborn, child or adolescent receive and when should s/he receive it?
- What health behaviours should a pregnant woman, mother, child or adolescent practise (or not practise)?

The recommendations included are all approved (or in the final stages of approval or publication) by WHO's Guidelines Review Committee (GRC). The process of developing guidelines is documented in WHO's *Handbook for guideline development*[1] and are based on the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) system.

The GRADE system classifies the strength of a recommendation as "strong" or "conditional".[2] A strong recommendation is one where the desirable effects of adhering to the recommendation outweigh the undesirable effects. A conditional recommendation is one where the desirable effects of adhering to the recommendation probably outweigh the undesirable effects but these trade-offs are not clear.

The system also grades the quality of evidence:

- High: further research is very unlikely to change confidence in the estimate of effect;
- Moderate: further research is likely to have an important impact on confidence in the effect;
- Low: further research is very likely to have an estimate of effect and is likely to change the estimate;
- Very low: any estimate of effect is very uncertain.

Wherever possible, the quality of evidence and strength of each recommendation, as well as the link where it can be found, are included in this publication.

Where no GRC-approved recommendation currently exists for a topic area of importance, a link is provided to existing guidance. In many cases, this guidance is currently being updated.

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[1] *Handbook for guideline development*. Geneva, WHO, 2012.

[2] The *Handbook for guideline development* does not define a "weak" recommendation, although this category is sometimes still used.

Prevent/promote/protect

1. Care of the newborn immediately after birth

Immediate drying and additional stimulation

- Newly born babies who do not breathe spontaneously after thorough drying should be stimulated by rubbing the back 2–3 times before clamping the cord and initiating positive pressure ventilation.

  (Weak recommendation, quality of evidence not graded) Source

Suction in newborns who start breathing on their own

- Routine nasal or oral suction should **not** be done for babies born through clear amniotic fluid who start breathing on their own after birth.

  (Strong recommendation, high quality evidence) Source

- Intrapartum suction of mouth and nose at the delivery of head in neonates born through meconium is not recommended.

  (Strong recommendation, low quality evidence) Source

- Suctioning of mouth or nose is not recommended in neonates born through liquor with meconium who start breathing on their own.

  (Weak recommendation, quality of evidence not graded) Source

- Tracheal suctioning should **not** be performed in newly born babies born through meconium who start breathing on their own.

  (Strong recommendation, moderate to low quality evidence) Source

Cord clamping

- Late cord clamping (performed after one to three minutes after birth) is recommended for all births while initiating simultaneous essential newborn care.

  (Strong recommendation, moderate quality evidence) Source

- Early cord clamping (<1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation.

  (Strong recommendation, moderate-quality evidence) Source

Skin-to-skin contact in the first hour of life

- Newborns without complications should be kept in skin-to-skin contact with their mothers during the first hour after birth to prevent hypothermia and promote breastfeeding.

  (Strong recommendation, low quality evidence) Source

Initiation of breastfeeding

- All newborns, including low-birth-weight (LBW) babies who are able to breastfeed, should be put to the breast as soon as possible after birth when they are clinically stable, and the mother and baby are ready.

  (Strong recommendation, low quality evidence) Source

Vitamin K prophylaxis

- All newborns should be given 1 mg of vitamin K intramuscularly [IM] after birth [after the first hour during which the infant should be in skin-to-skin contact with the mother and breastfeeding should be initiated].

  (Strong recommendation, moderate quality evidence) Source

- Neonates requiring surgical procedures, those with birth trauma, preterm newborns, and those exposed in utero to maternal medication known to interfere with vitamin K are at especially high risk of bleeding and must be given vitamin K [1 mg IM].

  (Strong recommendation, moderate quality evidence) Source

2. Postnatal care

Timing of discharge from the health facility

- After an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth.

  (Weak recommendation, low quality evidence) Source

Timing and number of postnatal contacts

- If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth. At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48–72 hours), between days 7–14, and 6 weeks after birth.

  (Strong recommendation, moderate quality evidence for newborn outcomes and low quality evidence for maternal outcomes) Source

Home visits in the first week of life

- Home visits in the first week after birth are recommended for care of the mother and newborn.

  (Strong recommendation, moderate quality evidence for newborn outcomes and low quality evidence for maternal outcomes) Source

Assessment of the newborn

- The following signs should be assessed during each postnatal care contact and the newborn should be referred for further evaluation if any of the signs is present: stopped feeding well, history of convulsions, fast breathing (*breathing rate ≥60 per minute*), severe chest in-drawing, no spontaneous movement, fever (temperature >37.5 °C), low body temperature (temperature <35.5 °C), any jaundice in first 24 hours of life, or yellow palms and soles at any age. The family should be encouraged to seek health care early if they identify any of the above danger signs in-between postnatal care visits.

  (Strong recommendation, low quality evidence) Source

Exclusive breastfeeding

- All babies should be exclusively breastfed from birth until six months of age. Mothers should be counselled and provided support for exclusive breastfeeding at each postnatal contact.

  (Strong recommendation, moderate quality evidence for neonatal outcomes; six month duration based on previous WHO recommendations and an updated Cochrane review) Source

Cord care

- Daily chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) application to the umbilical cord stump during the first week of life is recommended for newborns who are born at home in settings with high neonatal mortality (30 or more neonatal deaths per 1000 live births). Clean, dry cord care is recommended for newborns born in health facilities and at home in low neonatal mortality settings. Use of chlorhexidine in these situations may be considered only to replace application of a harmful traditional substance, such as cow dung, to the cord stump.

  (Strong recommendation, moderate quality evidence) Source

Keeping the newborn warm

- Bathing should be delayed until after 24 hours of birth. If this is not possible due to cultural reasons, bathing should be delayed for at least six hours. Appropriate clothing of the baby for ambient temperature is recommended. This means one to two layers of clothes more than adults, and use of hats/caps. The mother and baby should not be separated and should stay in the same room 24 hours a day.

  (GDG consensus based on existing WHO guidelines) Source

3. Newborn immunization[1]

- All infants should receive their first dose of hepatitis B vaccine as soon as possible after birth, preferably within 24 hours. This is crucial in areas of high hepatitis B endemicity, but important even in intermediate and low endemicity areas.

  (Strong recommendation, moderate quality evidence) Source

- Oral polio vaccine, including a birth dose (known as zero dose because it does not count towards the primary series), is recommended in all polio-endemic countries and in countries at high risk for importation and subsequent spread. The birth dose should be administered at birth, or as soon as possible after birth.

  (Strong recommendation, high quality evidence) Source

- In settings where tuberculosis is highly endemic or in settings where there is high risk of exposure to tuberculosis a single dose of BCG vaccine should be given to all infants.[2]

  (Strong recommendation, high quality evidence) Source

Other care

- Communication and play with the newborn should be encouraged. Immunization should be promoted as per existing WHO guidelines. Preterm and LBW babies should be identified immediately after birth and should be provided special care as per existing WHO guidelines.

  (GDG consensus based on existing WHO guidelines) WHO recommendations on postnatal care of the mother and newborn, 2013

Neonatal vitamin A supplementation

- At the present time, neonatal vitamin A supplementation (that is, supplementation within the first 28 days after birth) is not recommended as a public health intervention to reduce infant morbidity and mortality

  (Strong recommendation, moderate evidence for mortality-related outcomes). Source

[1] For updated information on all recommended immunizations, see http://www.who.int/immunization/policy/immunization_tables/en/index.html.

[2] For considerations on BCG vaccination for HIV-infected newborns, see http://www.who.int/immunization/wer8221bcg_May07_position_paper.pdf.

Management

4. Newborn resuscitation

Immediate care after birth

- In newly-born term or preterm babies who do not require positive-pressure ventilation, the cord should not be clamped earlier than one minute after birth.[1]

  (Strong recommendation, high to moderate quality evidence) Source

  When newly-born term or preterm babies require positive-pressure ventilation, the cord should be clamped and cut to allow effective ventilation to be performed.

  (Weak recommendation, Guidelines Development Group consensus in absence of published evidence) Source

- Newly-born babies who do not breathe spontaneously after thorough drying should be stimulated by rubbing the back two to three times before clamping the cord and initiating positive-pressure ventilation.

  (Weak evidence, Guidelines Development Group consensus in absence of published evidence) Source

- In neonates born through clear amniotic fluid who start breathing on their own after birth, suctioning of the mouth and nose should not be performed.

  (Strong recommendation, high quality evidence) Source

  In neonates born through clear amniotic fluid who do not start breathing after thorough drying and rubbing the back two to three times, suctioning of the mouth and nose should not be done routinely before initiating positive-pressure ventilation. Suctioning should be done only if the mouth or nose is full of secretions.

  (Weak recommendation, Guideline Development Group consensus in absence of published evidence) Source

- In the presence of meconium-stained amniotic fluid, intrapartum suctioning of the mouth and nose at the delivery of the head is not recommended.

  (Strong recommendation, low quality evidence) Source

- In neonates born through meconium-stained amniotic fluid who start breathing on their own, tracheal suctioning should not be performed.

  (Strong recommendation, moderate to low quality of evidence) Source

[1] "Not earlier than one minute" should be understood as the lower limit supported by published evidence. WHO *Recommendations for the prevention of postpartum haemorrhage* (Fawole B et al. Geneva, WHO, 2007) state that the cord should not be clamped earlier than is necessary for applying cord traction, which the Guidelines Development Group clarified would normally take around three minutes.

In neonates born through meconium-stained amniotic fluid who start breathing on their own, suctioning of the mouth or nose is not recommended.

(Weak recommendation, GDG consensus in absence of published evidence) Source

In neonates born through meconium-stained amniotic fluid who **do not** start breathing on their own, tracheal suctioning should be done before initiating positive-pressure ventilation.

(Weak (in situations where endotracheal intubation is possible), very low quality evidence) Source

In neonates born through meconium-stained amniotic fluid who **do not** start breathing on their own, suctioning of the mouth and nose should be done before initiating positive-pressure ventilation.

(Weak recommendation, Guidelines Development Group consensus in absence of published evidence) Source

- In settings where mechanical equipment to generate negative pressure for suctioning is not available and a newly-born baby requires suctioning, a bulb syringe (single-use or easy to clean) is preferable to a mucous extractor with a trap in which the provider generates suction by aspiration.

  (Weak recommendation, very low quality evidence) Source

Positive-pressure ventilation

- In newly-born babies who do not start breathing despite thorough drying and additional stimulation, positive-pressure ventilation should be initiated within one minute after birth.

  (Strong recommendation, very low quality evidence) Source

- In newly-born term or preterm (>32 weeks gestation) babies requiring positive-pressure ventilation, ventilation should be initiated with air.

  (Strong recommendation, moderate quality evidence) Source

- In newly-born babies requiring positive-pressure ventilation, ventilation should be provided using a self-inflating bag and mask.

  (Weak recommendation, very low quality evidence) Source

- In newly-born babies requiring positive-pressure ventilation, ventilation should be initiated using a face-mask interface.

  (Strong recommendation, based on limited availability and lack of experience with nasal cannulae, despite low evidence for benefits) Source

- In newly-born babies requiring positive-pressure ventilation, adequacy of ventilation should be assessed by measurement of the heart rate after 60 seconds of ventilation with visible chest movements.

  (Strong recommendation, very low quality evidence) Source

- In newly-born babies who do not start breathing within one minute after birth, priority should be given to providing adequate ventilation rather than to chest compressions.

  (Strong recommendation, low quality evidence) Source

Stopping resuscitation

- In newly-born babies with no detectable heart rate after 10 minutes of effective ventilation, resuscitation should be stopped.

  (Weak – relevant to resource-limited settings, very low quality evidence) Source

Post resuscitation care

- Head or whole body cooling should not be done outside well-resourced, tertiary neonatal intensive care units, because there is potential for harm from this therapy in low-resource settings.

  (Strong recommendation, moderate quality evidence) Source

5. Management of neonatal sepsis

Prophylactic antibiotics for prevention of sepsis

- A neonate with risk factors for infection (i.e. membranes ruptured >18 hours before delivery, mother had fever >38 °C before delivery or during labour, or amniotic fluid was foul smelling or purulent) should be treated with the prophylactic antibiotics ampicillin (Intramuscular – IM – or intravenously, IV) and gentamicin for at least two days. After two days, the neonate should be reassessed and treatment continued only if there are signs of sepsis or a positive blood culture.

  (Weak recommendation, very low quality evidence) Source

Empirical antibiotics for suspected neonatal sepsis

- Neonates with signs of sepsis should be treated with ampicillin (or penicillin) and gentamicin as the first line antibiotic treatment for at least 10 days.

  (Strong recommendation, low quality evidence Source

- If a neonate with sepsis is at greater risk of staphylococcus infection (e.g. extensive skin pustules, abscess, or omphalitis in addition to signs of sepsis), they should be given cloxacillin and gentamicin instead of penicillin and gentamicin.

  (Strong recommendation, quality of evidence not graded) Source

- Where possible, blood cultures should be obtained before starting antibiotics. If an infant does not improve in two to three days, antibiotic treatment should be changed, or the infant should be referred for further management.

  (Strong recommendation, quality of evidence not graded) Source

6. Care of the preterm and low-birth-weight newborn

Prevention of hypothermia immediately after birth

- LBW neonates weighing >1200 g who do not have complications and are clinically stable should be put in skin-to-skin contact with the mother soon after birth and after drying them thoroughly to prevent neonatal hypothermia.

  (Weak recommendation, low quality evidence) Source

Kangaroo Mother Care

- LBW neonates weighing <2000 g who are clinically stable should be provided Kangaroo Mother Care early in the first week of life.

  (Strong recommendation, moderate quality evidence) Source

Feeding of LBW infants

- LBW infants, including those with very low birth weight (VLBW), should be fed mother's own milk.

  (Strong recommendation, moderate quality evidence) Source

- LBW infants, including those with VLBW, who cannot be fed mother's own milk should be fed donor human milk.

  (Strong situational recommendation relevant to settings where safe and affordable milk-banking facilities are available or can be set up, high quality evidence) Source

- LBW infants, including those with VLBW, who cannot be fed mother's own milk or donor human milk should be fed standard infant formula.

  (Weak situational recommendation relevant for resource-limited settings, low quality evidence) Source

- VLBW infants who cannot be fed mother's own milk or donor human milk should be given preterm infant formula if they fail to gain weight despite adequate feeding with standard infant formula.

  (Weak situational recommendation relevant for resource-limited settings, low quality evidence) Source

- LBW infants, including those with VLBW, who cannot be fed mother's own milk or donor human milk should be fed standard infant formula from the time of discharge until six months of age.

  (Weak situational recommendation relevant for resource-limited settings, low quality evidence) Source

- VLBW infants who are fed mother's own milk or donor human milk need not be given bovine milk-based human-milk fortifier. VLBW infants who fail to gain weight despite adequate breast-milk feeding should be given human-milk fortifiers, preferably those that are human milk based.

  (Weak situational recommendation relevant to resource-limited settings, low to very low quality evidence) Source

- VLBW infants should be given vitamin D supplements at a dose ranging from 400 i.u. to 1000 i.u. per day until six months of age.

  (Weak recommendation, very low quality evidence) Source

- VLBW infants who are fed mother's own milk or donor human milk should be given daily calcium (120–140 mg/kg per day) and phosphorus (60–90 mg/kg per day) supplementation during the first months of life.

  (Weak recommendation, low quality evidence) Source

- VLBW infants fed mother's own milk or donor human milk should be given 2–4 mg/kg per day iron supplementation starting at two weeks until six months of age.

  (Weak recommendation, low quality evidence) Source

- Daily oral vitamin A supplementation for LBW infants who are fed mother's own milk or donor human milk is not recommended at the present time because there is not enough evidence of benefits to support such a recommendation.

  (Weak recommendation, low quality evidence) Source

- Routine zinc supplementation for LBW infants who are fed mother's own milk or donor human milk is not recommended, because there is not enough evidence of benefits to support such a recommendation.

  (Weak recommendation, moderate to low quality evidence) Source

- VLBW infants should be given 10 ml/kg per day of enteral feeds, preferably expressed breast milk, starting from the first day of life, with the remaining fluid requirement met by intravenous fluids.

  (Weak situational recommendation relevant to resource-limited settings where total parenteral nutrition is not possible, low to very low quality evidence) Source

- LBW infants should be exclusively breastfed until six months of age.

  (Strong recommendation, very low quality evidence) Source

- LBW infants who need to be fed by an alternative oral feeding method should be fed by cup (or palladai, which is a cup with a beak) or spoon.

  (Strong situational recommendation relevant to resource-limited settings, moderate quality evidence) Source

- VLBW infants requiring intragastric tube feeding should be given bolus intermittent feeds.

  (Weak recommendation, low quality evidence) Source

- In VLBW infants who need to be given intragastric tube feeding, the intragastric tube may be placed either by the oral or nasal route, depending upon the preferences of health-care providers.

  (Weak recommendation, very low quality evidence) Source

- LBW infants who are fully or mostly fed by an alternative oral feeding method should be fed based on infants' hunger cues, except when the infant remains asleep beyond three hours since the last feed.

  (Weak situational recommendation relevant to settings with adequate number of health care providers, moderate quality evidence) Source

- In VLBW infants who need to be fed by an alternative oral feeding method or given intragastric tube feeds, feed volumes can be increased by up to 30 ml/kg per day with careful monitoring for feed intolerance.

  (Weak recommendation, high quality evidence) Source

7. Care of the newborn of an HIV-infected mother

Antiretroviral prophylaxis for newborns

- HIV-exposed infants who are breastfed should receive six weeks of infant prophylaxis with once-daily nevirapine (NVP).

  (Strong recommendation, moderate quality of evidence) Source

- HIV-exposed infants who receive replacement feeding should receive four to six weeks of infant prophylaxis with once-daily NVP (or twice-daily Zidovudine – AZT).

  (Conditional recommendation, low quality evidence) Source

Infant feeding[1]

In settings where national authorities promote and support HIV-infected women to breastfeed and receive ARV interventions

- *Mothers known to be HIV-infected* should exclusively breastfeed their HIV uninfected infants or infants who are of unknown HIV status for the first six months of life.

  (Strong recommendation, high quality evidence) Source

In settings where national authorities promote and support HIV-infected women to avoid all breastfeeding

- *Mothers known to be HIV-infected* should only give commercial infant formula milk as a replacement feed to their HIV-uninfected infants or infants who are of unknown HIV status, when specific conditions are met:

  a. safe water and sanitation are assured at the household level and in the community, and,
  b. the mother, or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant; and,
  c. the mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition; and,
  d. the mother or caregiver can, in the first six months, exclusively give infant formula milk; and
  e. the family is supportive of this practice; and,
  f. the mother or caregiver can access health care that offers comprehensive child health services.

  (Strong recommendation, low quality evidence) Source

8. Management of other severe conditions

Neonatal seizures

- Clinically apparent seizures in the neonate should be treated if they last more than three minutes or are brief serial seizures.

  (Strong recommendation, quality of evidence not graded) Source

- In specialized care facilities where electroencephalography is available, all electrical seizures, even in the absence of clinically apparent seizures, should also be treated.

  (Strong context-specific recommendation, quality of evidence not graded) Source

- In all neonates with seizures, hypoglycaemia should be ruled out and treated if present before antiepileptic drug treatment is considered.

  (Strong recommendation, quality of evidence not graded) Source

- If facilities for measuring glucose are not available, consider empirical treatment with glucose.

  (Weak context-specific recommendation, quality of evidence not graded) Source

- If there are clinical signs suggestive of associated sepsis or meningitis, central nervous system infection should be ruled out by doing a lumbar puncture, and treated if present with appropriate antibiotics.

  (Strong recommendation, quality of evidence not graded) Source

[1] These recommendations were unchanged by the Guidelines Development Group in 2013.

- If facilities for lumbar puncture are not available, consider empirical treatment with antibiotics for neonates with clinical signs of sepsis or meningitis.

  (Weak, context-specific recommendation, quality of evidence not graded) Source

- In all neonates with seizures, serum calcium should be measured (if facilities are available) and treated if hypocalcaemia is present.

  (Strong context-specific recommendation, quality of evidence not graded) Source

- In the absence of hypoglycaemia, meningitis, hypocalcaemia or another obvious underlying etiology such as hypoxic-ischaemic encephalopathy, intracranial haemorrhage or infarction, pyridoxine treatment may be considered before antiepileptic drug treatment in a specialized centre where this treatment is available.

  (Weak context-specific recommendation, quality of evidence not graded) Source

- Phenobarbital should be used as the first-line agent for treatment of neonatal seizures; phenobarbital should be made readily available in all settings.

  (Strong recommendation, very low quality evidence) Source

- In neonates who continue to have seizures despite administering the maximal tolerated dose of phenobarbital, either midazolam or lidocaine may be used as the second-line agent for control of seizures [use of lidocaine requires cardiac monitoring facilities].

  (Weak recommendation, very low quality evidence) Source

- In neonates with normal neurological examination and/or normal electroencephalography, consider stopping antiepileptic drugs if neonate has been seizure-free for >72 hours; the drug(s) should be reinstituted in case of recurrence of seizures.

  (Weak recommendation, very low quality evidence) Source

- In neonates in whom seizure control is achieved with a single antiepileptic drug, the drug can be discontinued abruptly without any tapering of the doses.

  (Weak recommendation, quality of evidence not graded) Source

- In neonates requiring more than one antiepileptic drug for seizure control, the drugs may be stopped one by one, with phenobarbital being the last drug to be withdrawn.

  (Weak recommendation, quality of evidence not graded) Source

- In the absence of clinical seizures, neonates with hypoxic-ischaemic encephalopathy need not be given prophylactic treatment with phenobarbital.

  (Strong recommendation, moderate quality evidence) Source

- Where available, all clinical seizures in the neonatal period should be confirmed by electroencephalography.

  (Strong context-specific recommendation, quality of evidence not graded) Source

- Electroencephalography should not be performed for the sole purpose of determining the etiology in neonates with clinical seizures.

  (Strong recommendation, quality of evidence not graded) Source

- Radiological investigations (ultrasound, computed tomography and magnetic resonance imaging) of the cranium/head should not be performed to determine the presence or absence of clinical seizures or to evaluate the efficacy of treatment with antiepileptic drugs in neonates.

  (Strong recommendation, quality of evidence not graded) Source

- Radiological investigations may be done as a part of the comprehensive evaluation of the etiology of neonatal seizures or to determine prognosis in neonates with seizures.

  (Weak context-specific recommendation, quality of evidence not graded) Source

Management of neonatal jaundice

Monitoring jaundice and serum bilirubin

- Clinicians should ensure that all newborns are routinely monitored for the development of jaundice and that serum bilirubin should be measured in those at risk:
  - in all babies if jaundice appears on day 1
  - in preterm babies (<35 weeks) if jaundice appears on day 2
  - in all babies if palms and soles are yellow at any age.

  (Strong recommendation, very low quality evidence) Source

Serum bilirubin cut-offs for phototherapy and exchange transfusion

- Term and preterm newborns with hyperbilirubinaemia should be treated with phototherapy or exchange transfusion guided by cut-off levels of serum hyperbilirubinaemia.

  (Weak recommendation, very low quality evidence) Source

Stopping phototherapy

- Phototherapy should be stopped once serum bilirubin is 50 mmol/l (3 mg/dl) or below the phototherapy threshold.

  (Weak recommendation, quality of evidence not graded) Source

Management of necrotizing enterocolitis

Antibiotics for treatment of necrotizing enterocolitis

- Young neonates with suspected necrotizing enterocolitis should be treated with IV or IM ampicillin (or penicillin) and gentamicin as first line antibiotic treatment for 10 days.

  (Strong recommendation, low quality evidence) Source