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Manual de reanimación neonatal

An emergency medical procedure Medical intervention Neonatal resuscitationSpecialtyNeonatologyFrequency10% of newborns who do not readily begin breathing[edit on Wikidata] Neonatal resuscitation, also known as newborn resuscitation, is an emergency procedure focused on supporting approximately 10% of newborn children who do not readily begin breathing, putting them at risk of irreversible organ injury and death.[1] Many of the infants who require this support to start breathing well on their own after assistance. Through positive airway pressure, and in severe cases chest compressions, medical personnel certified in neonatal resuscitation can often stimulate neonates to begin breathing on their own, with attendant normalization of heart rate.[2] Face masks that cover the infant's mouth and nose are often used in the resuscitation procedures. Nasal prongs/tubes/masks and laryngeal mask airway devices are also sometimes used.[3] Up to 10% of infants are born requiring assistance to begin breathing. After assistance, many of these infants begin to breath on their own and are healthy. Breathing problems at birth is a high priority emergency and interventions such as breathing support and resuscitation is sometimes required.[3] All infants who are 'gasping', show signs of being apnoeic (suspension of breathing), or have bradycardia with a heart rate lower than 100 beats per minute after birth are recommended to be administered positive pressure ventilation with a 'manual ventilation device' to provide breathing support.[4] Examples of manual ventilation devices include a self-inflating bag or a T-piece.[3] About a quarter of all neonatal deaths globally are caused by birth asphyxia.[5] This dangerous condition of oxygen deprivation may begin before birth. For example, if the umbilical cord, which supplies oxygen throughout fetal development, is compressed or tears during delivery. Depending on how quickly and successfully the infant is resuscitated, hypoxic damage can occur to most of the infant's organs (heart, lungs, liver, gut, kidneys). One serious complication is a brain injury known as neonatal hypoxic-ischemic encephalopathy.[citation needed] The most widely known training/certification for neonatal resuscitation is the Neonatal Resuscitation Program (NRP). Neonatal Resuscitation Program - Started by the American Academy of Pediatrics, this course has been revised several times and is currently offered to anyone who participates in neonatal resuscitation including but not limited to: Nurses, Physicians, Respiratory Therapists, Certified Nursing Assistants, and others. The course is broken down into 11 sections and a final skills assessment. There are currently 4 million healthcare providers that are certified. It is estimated that 200,000 healthcare providers take this course every year.[6] Pediatric Advanced Life Support (PALS) - This program is more general to all pediatric patients, but does provide some neonatal resuscitation training. On-the-job training. The International Liaison Committee on Resuscitation (ILCOR) has published Consensus on science and treatment recommendations for neonatal resuscitation.[4] Traditionally, newborn children have been resuscitated using mechanical ventilation with 100% oxygen, but there has since the 1980s increasingly been debated whether newborn infants with asphyxia should be resuscitated with 100% oxygen or normal air, and notably Ola Didrik Saugstad has been a major advocate of using normal air.[7][8] In 2020, the International Liaison Committee on Resuscitation (ILCOR) published its 4th and most recent recommendations for newborn life support. The committee reviewed 8 major topics, including anticipation and preparation, initial assessment and intervention, physiologic monitoring and feedback devices, ventilation and oxygenation, circulatory support, drug and fluid administration, prognostication during CPR, and post-resuscitation care.[4] Initial evaluation of a newborn is done by obtaining an Apgar score, which gives the clinician an approximation of the infant's cardiovascular and neurologic condition at birth. A score of 7–10 at 5 minutes is normal, a score of 4 to 6 at 5 minutes is intermediate, and a score of 0-3 is considered low. It is important to understand that an Apgar score is not a diagnosis, it is merely a clinical finding.[9] If a newborns score is 0–3, then resuscitation efforts are initiated.Apgar score for newborn infants Neonatal resuscitation guidelines closely resemble those of the pediatric basic and advanced life support. The main differences in training include an emphasis on positive pressure ventilation (PPV), updated timings on ventilation assistance rates, and some differences in the cardiac arrest chain of survival. Guidelines for neonatal resuscitation are assessed annually and are developed in collaboration with multiple organizations of numerous experts, including the American Academy of Pediatrics (AAP). In 2020, the ILCOR recommended the following changes to current resuscitation guidelines:[4] Ceasing oropharyngeal and nasopharyngeal suctioning for newborns with clear or meconium-stained amniotic fluid. Newborns who receive Positive Pressure Ventilation (PPV) for either ineffective respirations or bradycardia should not also receive initially sustained inflations greater than 5 seconds. Intravenous epinephrine is administered if the heart rate does not increase to 60 beats per minute after ventilation and chest compressions have been optimized. umbilical venous catheterization should be the primary vascular access route during delivery.[4] While some guidelines do tend to change, certain elements of neonatal resuscitation have persisted. These include: For uncomplicated term or preterm infants, delayed cord clamping is standard so that the child can immediately be placed in the mothers arms to be evaluated.[4] Supplemental oxygen is used judiciously.[4] Monitoring of heart rate is the best indicator of response to resuscitation efforts.[4] Epinephrine should be administered intravenously if response to chest compressions is poor.[4] Most neonatal deaths (roughly 75%) after resuscitation occur within the first week, but the vast majority occur within 24 hours.[citation needed] This statistic is based on a mean Apgar score of 5.9, which is considered intermediate. More data is needed to understand outcomes for more severe patients. Outcomes after resuscitation for neonates vary widely based on many factors. One study in Norway analyzed 15 peer-reviewed published articles and found that high-income countries have a mortality rate as high as 10% while low-income countries have a mortality rate as high as 28%.[10] One major factor that improved survival was how quickly medical responders were able to intervene, noting that the first minutes are critical.[11] It has been demonstrated that high concentrations of oxygen lead to generation of oxygen free radicals, which have a role in reperfusion injury after asphyxia.[12] Clinical trial evidence suggests that resuscitation using air probably reduces the risk of death[13] and the 2010 ILCOR guidelines recommend the use of normal air rather than 100% oxygen.[14] Another study showed that preterm infants have little or no difference in risk of death or neurodevelopment disability when higher concentrations of oxygen are used compared to lower concentrations but the evidence from clinical trials is still relatively uncertain.[15] Currently, it is the gold standard to place neonates on a cooling blanket for 72 hours to achieve total body cooling. This is done in order to minimize brain swelling. After cooling is achieved, an MRI is obtained roughly 1 week after hypoxic brain injury in order to classify the severity of brain damage. However, one study found that there was no significant correlation between MRI findings and developmental delay up to 2 years of life.[16] ^ "Neonatal Resuscitation - Pediatrics". Merck Manuals Professional Edition. Retrieved 2019-11-13. ^ Johnson, Peter A.; Schmölzer, Georg M. (23 February 2020). "Heart Rate Assessment during Neonatal Resuscitation". Healthcare. 8 (1): 43. doi:10.3390/healthcare8010043. PMC 7151423. PMID 32102255. ^ a b c Ni Chathasaigh, Caitriona M; Davis, Peter G; O'Donnell, Colm PF; McCarthy, Lisa K (2023-10-03). Cochrane Neonatal Group (ed.). "Nasal interfaces for neonatal resuscitation". Cochrane Database of Systematic Reviews. 2023 (10). doi:10.1002/14651858.CD009102.pub2. PMC 10546484. 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ÍNDICE1. CONCEPTOS BÁSICOS Y PILARES DE LA REANIMACIÓN2. RECOMENDACIONES DE LA AHA, ENARM 20213. ALGORITMO DE LA REANIMACIÓN NEONATAL4. ¿CÓMO CITAR ESTE ARTÍCULO?¡Bienvenidxs!, soy Interneuronamed y en este artículo encontrarás las actualizaciones de la guía AHA 2020 e ILCOR 2015 para reanimación neonatal así como una guía completa para la realización adecuada de la misma.Sígueme en mis redes sociales (Twitter, Facebook, YouTube, Instagram) como @Interneuronamed, donde encontrarás resúmenes de medicina y más cosas que te interesarán. !No olvides ir hasta el final de la página para seguirme a través de Google y recibir nuevas actualizaciones del blog!.1. CONCEPTOS BÁSICOS Y PILARES DE LA REANIMACIÓNLa asfixia al nacer representa cerca del 23% de las muertes neonatales que ocurren al año en todo el mundo. Al menos 90% de los RN hacen la transición de la vida intrauterina a la extrauterina sin dificultad y sin necesidad de asistencia, pero el 10% requerirá cierta ayuda para comenzar la respiración y menos del 1% necesitará medidas de reanimación más extensas como intubación, compresiones torácicas y medicamentos.Epidemiología de la Reanimación NeonatalCabe aclarar que el retraso en el inicio de la respiración no sólo es resultado de la asfixia perinatal (APN, VER AQUÍ), también se puede deber a otros factores como drogas depresoras del SNC administradas a la madre, prematurez, trauma obstétrico, debilidad muscular, anemia o anomalías congénitas. Es por esto, que además de iniciar la reanimación neonatal de forma inmediata, hay que identificar la causa subyacente con ayuda de os antecedentes en la historia clínica (HC) y corregirla.Etapa neonatal: se extiende desde el nacimiento hasta los primeros 28 días de vida extrauterina y es dividida en dos períodos, el hebdomadario o neonatal inmediato (primeros 6 días) y el poshebdomadario o neonatal tardío (día 7 al 28).La necesidad de reanimación neonatal por problema en la respiración que causa ventilación inadecuada, es contrastada con el paro cardíaco en adultos por circulación inadecuada. Dentro de nuestros objetivos es proteger al encéfalo, corazón y riñón de la lesión tisular isquémica. Un TIP INTENEURONA es que a través de la anamnesis gestacional y del parto podemos identificar con tiempo cualquier problema previo al nacimiento que requiera reanimación neonatal, y prepararnos junto con nuestro equipo médico para brindar una mejor atención.Pilares de la Reanimación NeonatalJusto después de nacer, hay que secar, calentar y estimular a todos los neonatos a término. Si el neonato no necesita reanimación, estos pasos los podemos realizar en el vientre materno mientras se realiza el pinzamiento diferido del cordón umbilical.La incapacidad de iniciar o mantener el esfuerzo respiratorio es frecuente al nacer, y cuando el neonato responde a la estimulación estableciendo respiración normal, se denomina apnea primaria; cuando requiere soporte ventilatorio para establecer esfuerzo respiratorio espontáneo, se llama apnea secundaria y su causa más frecuente es la APN.Los pasos en la reanimación es de (A) anticipar y establecer vía aérea permeable, colocando al RN en ligera extensión de cabeza, en posición de olfateo y con aspiración si las secreciones bloquean las vías aéreas; (B) iniciar respiración primero con estimulación táctil, si no funciona la segunda alternativa es la ventilación por presión positiva con una bolsa-mascarilla; (C) mantener la circulación con compresiones torácicas y medicamentos (epinefrina) si es necesario.TIP INTERNEURONA: Los tres puntos básicos de la reanimación son posicionar y despejar vías aéreas, estimular respiración, evaluación de la FC y SpO2. Hay que estar preparados siempre para la reanimación, incluso en neonatos sin factores de riesgo.Signos vitales normales por edad.2. RECOMENDACIONES DE LA AHA 2020 EN ESPAÑOL, ENARM 2021En un resumen de los 10 pasos esenciales de la reanimación neonatal, la guía de la AHA 2020 nos menciona lo siguiente:1. Se requiere anticipación y preparación individual y del equipo de reanimación.2. La mayoría de los RN no requieren pinzamiento del cordón umbilical o reanimación inmediata.3. La inflación y ventilación de los pulmones son prioridad cuando el RN necesita apoyo ventilatorio.4. El aumento de la frecuencia cardíaca (FC) es el indicador más importante de una ventilación efectiva y respuesta adecuada al tratamiento (TX).5. La saturación parcial de oxígeno (SpO2) guía la oxigenoterapia y objetivos de saturación de oxígeno.6. Dar compresiones torácicas si hay respuesta deficiente de la FC a la ventilación apropiada (incluyendo preferentemente la intubación endotraqueal).7. La respuesta de la FC a las compresiones torácicas deben ser monitoreadas por electrocardiograma (EKG).8. Si la respuesta es deficiente a los pasos anteriores, proporcionar epinefrina intravenosa.9. La falta de respuesta a la epinefrina en un RN con antecedentes o datos de pérdida de sangre, puede requerir de expansión de volumen.10. Si todos los pasos anteriores no fueron suficientes para una buena respuesta, discutir, con el equipo de trabajo y la familia, la redirección de la atención en no más de 20 minutos.3. ALGORITMO DE LA REANIMACIÓN NEONATALReanimación Neonatal, Algoritmo AHA 20203.1 Asesoramiento prenatal + Reunión del equipo + Comprobación de material y equipo necesario, previo al parto.RECOMENDACIÓN AHA 2020: Es importante que cada bebé tendrá una persona capacitada y equipada para facilitar la transición con reanimación y VPP. El hospital debe tener una herramienta estandarizada para evaluar factores de riesgo perinatales antes de cada nacimiento.Factores de riesgo para necesidad de reanimación neonatal.3.2 Durante el primer minuto de vida extrauterina y posparto, hay que preguntarse: ¿ Gestación a término?, ¿Tono adecuado?, ¿Respira o llora?RECOMENDACIÓN AHA 2020: Tener en cuenta la gestión del cordón umbilical y las acciones iniciales, así como evaluación adecuada de la FC.TIP INTERNEURONA: Si el bebé tiene respiración entrecortada o boqueo, indica depresión neurológica y respiratoria grave, considerar la tercera pregunta como un NO.A) Gestión del cordón umbilical: Cualquier RN a término o prematuro que no requiera reanimación al nacer, hay que retrasar el pinzamiento del cordón >30 segundos; si requirieron pinzamiento del cordón, no hay evidencia suficiente para recomendar un pinzamiento temprano o tardío del cordón. En un RN de