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Forward

Some aspects of Perinatal Medicine are still controversial and deserve close monitoring because "things change rapidly" in this field that express the co-operation of two main branches of medicine, those that see the arrival of life: Obstetrics and Neonatology. Within them in the last years a new branch has been evolving with the aim of reducing the risks, both for the mother and the baby, of interventional deliveries, and of eliminating pain during an uneventful labour and the delivery itself. This growing field is the obstetric analgesia. It doesn't wish to cancel the favourable effects of pain, especially those tied to hormone release, but instead wants to eliminate the negative sensations that so often are related to the delivery and can interfere with a good parenthood. The problems of pre- and post-natal management of extreme prematurity and of intrauterine growth retardation are here updated together with aspects of maternal and infant infectious diseases.

Guest Editors:

Leonardo Marino

Department of Maternal and Child Medicine,
Division of Obstetrics and Gynecology,
La Spezia, Italy

Giulio Bevilacqua

Department of Gynecologic,
Obstetric and Neonatal Sciences,
University of Parma, Parma, Italy

Stefano Parmigiani

U.O. of Neonatology
University Hospital, Parma, Italy

Preeclampsia: which therapeutic management?

M.E. Pietrolucci, B. Casalino, D. Arduini

Department of Surgery, University of Tor Vergata, Roma, Chair of Gynecology and Obstetric

Key words: preeclampsia, Doppler velocimetry, HELLP syndrome

Preeclampsia (PE) is a multisystem disease responsible for the major part of maternal and fetal mortality and morbidity. In Italy it accounts for about 1% of all pregnancies. Systolic arterial blood pressure (ABP) ≥ 140 mmHg or diastolic ABP ≥ 90 mmHg, together with proteinuria (> 0.3 gr/24h) after 20th weeks' gestation in a previously normotense woman define the picture of preeclampsia. In absence of proteinuria, PE can be considered if cerebral symptoms, epigastric or right hypocondrium pain together with nausea and vomit, thrombocytopenia and hepatic enzymes increase are present.

Therapeutic approach – *Prevention and early diagnosis* can be done with Doppler velocimetry and echography at 22-24 weeks. The pharmacological prevention is done with aspirin, diet rich of polyunsaturated fatty acids, antioxidants, calcium and anti-hypertensive drugs. *Ante-partum management of minimal PE* before 37 wks has not been precisely defined yet. A close monitoring of fetal biometry together with echographic estimate of weight and quantity of amniotic fluid are advisable. If there is fetal growth retardation (FGR) Doppler velocimetry is indicated: the brain sparing phenomenon should be closely monitored and a reverse flow should indicate hospitalization for considering the accomplishment of the delivery in case of altered cardiotocography (CTG). *Ante-partum management of severe PE* foresees the need to accomplish the delivery after 34 weeks' gestation, but there isn't any agreement concerning the management in fetuses < 34 weeks' gestation, in particular if fetal and maternal conditions are stable and reassuring. The choice of an antihypertensive drug should be guided by the clinical experience of the physician and the target of the therapy is to keep the ABP in the range

140-155 mmHg (systolic) / 90-105 mmHg (diastolic). The only drugs that have to be avoided are diazoxide and ketanserin, and ACE-inhibitors and sartans are contraindicated during the 2nd and 3rd trimester. Diuretics should be used only in case of congestive heart failure with pulmonary oedema or for renal problems. The use of albumin for hypoproteinemia should be strictly monitored. The ACOG 2002 guidelines suggests: 1) in case of HELLP (Haemolysis Elevated liver enzymes low platelet) syndrome: immediate delivery; 2) if convulsion then MgSO₄; 3) if diastolic ABP ≥ 105 -110 mmHg administer hydralazine and labetalol; 4) in case of heart or renal failure, unresponsive hypertension, pulmonary oedema use invasive haemodynamic monitoring; 5) in pregnancy at term: induction of labour. *Prevention of convulsions* can be carried out with MgSO₄ but also with more handy drugs such as diazepam or phenytoin while awaiting to accomplish the delivery. *Timing of delivery*: the delivery is the definitive treatment of PE. The maternal indications to accomplish the delivery are: ≥ 38 weeks' gestation, platelets count $< 100,000/\text{mm}^3$, hepatic and/or renal progressive failure, suspect detachment of placenta, persistent severe headache or visus alterations, severe epigastric pain, nausea, vomit, eclampsia. The fetal conditions are: severe FGR, worrying CTG, oligo-amnios. *Postpartum management*: a careful evaluation of the hydric balance should be carried out to avoid pulmonary oedema and exacerbation of hypertension. The latter can persist for > 1 week and in such a case antihypertensive treatment is recommended, having the possibility of using different drugs than during pregnancy. If ABP is well stable and asymptomatic the mother can be discharged.

Pharmacologic prophylaxis of eclampsia

P.F. Bolis, S. Tomera, P. Beretta, A. Cromi

Department of Obstetric and Gynecology, University of Insubria, Varese, Italy

Key words: eclampsia, prophylaxis, magnesium sulphate

Eclampsia is a rare obstetric complication in developed countries but it is associated with an increased risk of maternal death. Since we do not know the pathogenesis of eclampsia, our strategies for its prevention are limited. There is strong evidence from placebo-controlled trials that, for women with preeclampsia, Magnesium sulphate (MS) more than halves the relative risk of eclampsia. It seems likely that it also leads to a clinically important reduction in the incidence of maternal death whereas it has not substantive effect on stillbirth or neonatal mortality. In the MAGPIE trial, the largest randomized trial comparing MS with placebo for the prevention of convulsions in women with preeclampsia, the rate of eclampsia was significantly lower in the subjects treated

with MS (RR: 0.42; CI: 0.26-0.67). The number needed to be treated to prevent one case was 36 in those with imminent eclampsia, 71 and 400 in those with severe and mild preeclampsia, respectively. Thus the routine use of MS in patients with mild preeclampsia is not justified. Nifedipine, a specific cerebral vasodilator, is less effective than MS for seizure prophylaxis in women with severe preeclampsia. MS is the drug of choice for reducing the rate of eclampsia occurring intrapartum or immediately post-partum. The prophylactic use of MS should be considered for women at high risk of eclampsia who are hospitalized, during labour and for at least 12-24 hours post-partum and requires a strict clinical monitoring.

Doppler velocimetry and timing of birth in the intrauterine growth retardation

C. Montoneri, A. Garofalo, N. Santonocito, D. Carpino

Department of Obstetrical, Gynecological and Radiological Sciences, University of Catania, Italy

Key words: Doppler velocimetry, venous district, haemodynamic changes, timing of delivery, IUGR

The intrauterine growth retardation (IUGR) in 30% of the cases is associated with fetal hypoxia and consequently with poor perinatal prognosis. Therefore the main problem is to decide when the risks of hypoxia (intrauterine death or cerebral damage) are higher than the risks of prematurity, and consequently to define the timing of accomplishment of the delivery. In order to give an answer to this problem a lot of methods are used (e.g. cardiotocography, biophysical profile) but the study of the haemodynamic changes in the fetal vessels is presently the most used technique.

The haemodynamic changes both in the arterial and the venous district are investigated. The first are well known and their prognostic value is enough clear. On the contrary the haemodynamic changes in the

venous vessels have been studied only in the last years and their predictive ability with regard to fetal hypoxia is still a controversial point. Particularly, in the venous district, haemodynamic changes in the inferior vena cava, in the umbilical vein and in the ductus venosus of Arantius are evaluated, but a common consensus has not been reached concerning their use in clinical practice. The main debates concern the need to deliver the fetus before or after the appearance of venous haemodynamic changes. In fact these changes might suggest the fetus is already irreversibly damaged.

In conclusion, according to our results, the old saying "*It is better to deliver a smaller fetus but certainly healthy than a larger fetus but probably damaged*" must be always taken into account.

Second trimester premature rupture of the membranes. Which counselling?

S. Dessole, G. Capobianco

Department of Pharmacology, Gynecology and Obstetrics, University of Sassari, Italy

Key words: premature rupture of the membranes, counselling

The premature rupture of the membranes (PROM) is defined as the spontaneous rupture of the membranes that occurs before the onset of labour. When spontaneous rupture occurs before 37 weeks' gestation, it is named preterm PROM. Preterm PROM is responsible for approximately one third of all preterm births. Preterm PROM is an important cause of perinatal morbidity and mortality. Counselling involves a client (subject that feels the need to be helped) and a counsellor (experienced physician, impartial, trained to the listening, to the support, to the guide). It is important to discuss, to plan and to arrange with the woman a strategy of realistic action (interventions and attended results). Thus counselling is difficult but is mandatory. Respiratory distress syndrome (RDS) is the most common serious complication after preterm PROM at

any gestation. Other serious acute morbidities including necrotizing enterocolitis, intraventricular haemorrhage, and sepsis are common with early preterm birth but relatively uncommon near term. The management of the PROM asks for an accurate diagnosis and an evaluation of the risks and benefits to go forward with the pregnancy or immediately to give birth. The treatment of the preterm PROM between 23 and 31 weeks should aim to go forward with the pregnancy and to try to reduce the perinatal morbidity through a continuous fetal surveillance and brought closer for underlying infections, abruptio placentae or signs of fetal distress. It is important to inform the patient on the possible serious maternal, fetal and neonatal complications that can rise up despite the appeal to a scrupulous and correct management.

Epidural analgesia during delivery and obstetric complications

L. Marino, C. Sani, M. Monti

Department of Maternal and Child Medicine, Division of Obstetrics and Gynecology, La Spezia Hospital, Italy

Key words: obstetric complication, analgesia, epidural

Epidural analgesia is now considered as the most effective method for pain control during labour.

A lot of studies have considered its effect on delivery and on perinatal complications.

The incidence of a lot of complications has dropped down with the introduction in the clinical practice of new drugs with selective affinity for the pain fibers and not for the sensitive ones and by using “lower concentrations and higher volumes”.

Epidural labour analgesia is associated with longer duration of the second stage of labour independently by the period of time between onset of first stage of labour and application of epidural analgesia.

This longer duration has no adverse effect on perinatal outcome and perinatal complications, so it can be considered as physiological variant; in this direction a lot of studies demonstrate that “pushing late”, during epidural labour analgesia, is associated with a lower ra-

te of operative delivery and caesarean section versus “pushing early”.

In the near future it will be necessary to obtain a new Friedman Curve for epidural labour analgesia.

Oxytocin is significantly more frequently used in the epidural group but complications due to its use are not reported.

It is well demonstrated that epidural analgesia does not increase the rate of caesarean sections while data regarding operative deliveries are still controversial.

Perinatal outcome is not influenced by epidural analgesia during labour or caesarean section: there are no differences in 1 and 5-minute Apgar scores, and maternal blood loss in patients with and without epidural analgesia.

In conclusion epidural analgesia, during labour, can be considered as a safe pain control method. We hope for its greater diffusion in the clinical practice.

The extreme newborn: when to limit supports

M. Agosti, G. Calciolari, L. Leva, F. Tandoi

Neonatal Intensive Care Unit, Varese Hospital, Italy

Key words: viability, preterm, ethics

Changes in obstetric and neonatal care have improved mortality and morbidity for extremely low birth weight infants. Despite a large agreement about the main treatments (i.e. prenatal steroids, surfactant), results differ among centers, with different ethical models and behaviours in extending or continuing the care for these “viable fetuses” (Jobe AH. *J Pediatr* 2001; 138: 153-6).

A: in the delivery room: *What is the limit of viability? Should a limit for interventions based on gestational age or birth weight be established?*

B: in the NICU practice: *What are the risks of aggressive therapy? What is the role of the family in the decision making process? How the rights of the extremely premature infants can be preserved?*

Individual, cultural and religious patterns of care-

givers are fundamental but the construction of an ethics based model of assistance within each unit must hold in due consideration the “local” experience.

An early prognostic hypothesis should be advanced on the basis of perinatal history and on the infant adaptation to initial interventions; the “cost” of assistance during hospitalization adds strength to prognosis and gets the caregivers ready to face with questions of the family and, eventually, with the decision-making process during the “futile care” period (Campbell DE, et al. *Am J Perinatol* 2001; 18: 117-28).

Decisions about every “big” intervention must be shared among professionals in the unit even to avoid the feeling to be “alone” in front of basic decisions. Economical aspects of assistance should be considered.

Respiratory care of extremely low birth weight (ELBW) infants

S. Parmigiani

Neonatal Intensive Care Unit, University Hospital, Parma, Italy

Key words: ventilation induced lung injury; extremely low birth weight; surfactant

The instruments to reduce ventilation induced lung injury (VILI) are: 1. high frequency ventilation; 2. liquid ventilation; 3. open lung ventilation; 4. antioxidants; 5. synchronized intermittent mechanical ventilation (SIMV) \pm guaranteed volume (VG); 6. nasal continuous positive airway pressure; 7. surfactant (SF). I will discuss about SIMV and SF.

In SIMV the respirator tries to be synchronous with patient's respiratory activity and to sustain it when insufficient. It allows to reduce both airleaks and time in ventilation, but not risks tied to the higher peak pressure requested and to possible hypocapnia. VG has been introduced to limit the tidal volume (V_t) within a prefixed range and permits lesser excursion of V_t during rapid changes of lung compliance (Crs). Besides it makes easier the weaning from ventilator. SF stabilizes the alveolus therefore reducing the excessive stretching during breathing and limiting the requirement of high pressures, also showing anti-inflammatory properties (especially SP-A). However, in experimental studies,

even with adding SP-A, it could reduce VILI but couldn't help the release of cytokines. Other drugs such as recombinant CC-10, that acts inhibiting PLA_2 and has anti-inflammatory properties are under investigation with promising results. In our follow-up studies SF was able to allow babies with severe respiratory distress syndrome (RDS) had, at 2 yr of post-conception age (p.a.), similar respiratory mechanics values than a control group with significantly less severe RDS not treated with SF. We found that babies with g.a. 23-26 wks had lower values of respiratory system resistances at term p.a. if they were given SF, and that Crs normalized in about 70% of the cases within the 1st yr of life in survivors. We have shown the trend of Crs is significantly related to respiratory frequency.

Conclusion. To avoid VILI and improve pulmonary outcome of ELBW infants we should use SIMV + VG at 3-5 ml/kg, avoiding high pressures and hypocapnia. Follow-up can be carried out with the simple measurement of the respiratory frequency.

Hypoxic-ischemic encephalopathy: a new approach to diagnosis and therapy

S. Alberico, G.P. Maso, A. Limone, V. Soini, C. Busnelli

Obstetrical and Gynaecological Department, IRCCS Burlo Garofolo, Trieste, Italy

Key words: hypoxia, disability, hypothermia

Death or psychomotor disability are not always the only outcomes of hypoxic-ischemic encephalopathy but they depend on the timing and severity of hypoxia. Hypoxic-ischemic cellular necrosis and apoptosis from six to fifteen hours after delivery are the two sequelae of asphyxia injury. A spectroscopic magnetic resonance imaging (MRI) shows a two-steps failure of neonatal neurological energy: a primary energy reduction and a secondary loss lead to neonatal death after six-eight hours.

Head cooling and mild systemic hypothermia delayed up to six-eight hours after hypoxic-ischemic injury could prevent or reduce neurological injury and improve neonatal outcome. Gluckman et al. (Lancet 2005; 365:663-70) recruited infants born at 36 weeks or longer of gestation with acute encephalopathy. Inclusion criteria were Apgar score ≤ 5 at 10 minutes, resuscitation up to 10 minutes, pH less than 7 or base

excess of 16 or more, severe/moderate encephalopathy, abnormal cerebral function monitoring for 20 minutes or more. 108 infants (intervention group) were treated with head cooling and 110 infants (control group) with conventional care. After 18 months, 55% of the intervention group infants and 66% of the control group died or had disability. Infants with severe EEG changes did not benefit by head cooling, but it had a protective efficacy in infants with mild EEG changes. Fifty-four percent of the cooled infants with severe asphyxia had a favourable outcome *vs.* 34% in the control group, while no benefit was seen with severe asphyxia in both groups. Eicher et al. (Pediatr. Neurol. 2005; 32:11-7), found that hypothermia can reduce the incidence of death or psychomotor disability also with severe hypoxic-ischemic injury.

New approaches to monitor infant health are the cerebral function monitor and the MRI.

Congenital cytomegalovirus infection in pregnancy: a 5-years experience with a prospective study

D. Gramellini, S. Fieni, M. Oliva, G. Benassi, L. Benassi

Department of Gynaecologic, Obstetric and Neonatal Sciences, University of Parma, Italy

Key words: cytomegalovirus, fetus, prenatal diagnosis, amniocentesis

The study investigates the rate of mother-fetus transmission of cytomegalovirus (CMV) congenital infection in the period 1999-2004 at our department, with regards to the diagnostic technique suitable in detecting such pathology. 37 women with suspected primary seroconversion to CMV were enrolled for the study.

Serologic diagnosis of primary CMV infection was documented by seroconversion or a significant rise of IgG antibody title in the presence of specific IgM antibodies associated with low IgG avidity.

Each patient received an adequate counselling about amniocentesis for CMV isolation, and PCR amplification of CMV DNA in amniotic fluid.

A detailed ultrasonographic examination was performed monthly; each newborn infant was examined at birth, and followed-up till to 12th month of life by CMV isolation in urine samples and clinical evidence of infection.

The 14 patients with a documented seroconver-

sion had low IgG avidity: 9 cases underwent amniocentesis and 3 resulted infected, however 5 infants (38%) out of the 13 born showed clinical signs of infection. Seven out of 12 patients with positive CMV IgM and low avidity opted for amniocentesis: 3 were positive for amniotic infection, but only 1 infant showed congenital infection after birth. Only 5 out of 11 patients with high avidity underwent amniocentesis, and 1 case resulted infected, however no baby showed congenital infection.

We concluded that IgG avidity is an excellent test to date the primary infection. PCR on amniotic fluid offers a 75% in sensibility and 87% in specificity, with a PPV of 60%, a NPV of 93%, and a calculated RR of 8.4.

PCR on amniotic fluid is a reliable test to discriminate between infected and healthy fetuses. Why some affected fetuses will develop symptomatic infection and other do not has not already been demonstrated.

Vertical transmission of HCV infection (*ad interim* analysis)

I. Dodi, E. Romanini¹, P.L. Bacchini¹, S. Parmigiani¹, R. Agistri, C. Ruspaggiari², A. Bacchi-Modena², G.C. Izzi, G. Bevilacqua²

Pediatrics & Oncohaematology, Infectious Section, ¹O.U. Neonatology, University Hospital of Parma, and ²Dept. of Gynecologic, Obstetric and Neonatal Sciences, University of Parma, Italy

Key words: hepatitis C, vertical transmission, breastfeeding

Introduction. Vertical transmission from mother to fetus of HCV is variable from 0% to 36%, and seems more relevant in HCV-RNA and in co-infected HCV-HIV mother. The type of delivery and breastfeeding does not seem able to influence rate of transmission.

Aim. To evaluate perspectively the vertical transmission of HCV from infected mother to the fetus.

Patients and Methods. In the period 01.01.1996-31.12.2004 we have followed-up 234 HCV-positive mothers and their infants. All mothers were allowed to breastfeed unless HIV-positive. Babies were monitored for HCV-Ab and HCV-RNA. Infection of the baby was defined as: HCV-Ab after 18mth or HCV-RNA in 2 samples at a distance of 3mth. Statistical analysis was performed with χ^2 .

Results. The rate of transmission was 6.15%, i.e. 15 cases whose mother were HCV-RNA positive. In case of co-infection with HIV the rate of transmission of HCV was 33% (*p vs.* HCV without HIV co-infection <.001) without transmission of HIV. No baby had acute hepatitis. 79% of the infected babies were born by caesarean section (*p vs.* vaginal = NS). In the breastfed babies the rate of infection was 4.6%.

Conclusion. Our data, with the limit of *ad interim* analysis, confirm the rate of vertical transmission is very limited and confined to HCV-RNA positive mothers. Co-infection with HIV greatly increased the risk of transmission. The type of delivery and breastfeeding were uninfluent.

Clinical experience of palivizumab to prevent respiratory syncytial virus (RSV) infection in high risk infants

A. De Martino¹, S. Parmigiani², E. Solari¹, S. Moretti², G. Bevilacqua¹

¹Department of Gynaecologic, Obstetric and Neonatal Sciences, Parma University; ²U.O. Neonatology, University Hospital, Parma, Italy

Key words: palivizumab, respiratory syncytial virus, low birth weight

Introduction. RSV infection is an important cause of mortality and morbidity. Prematurity and low birth weight are risk factors for the development of severe lower respiratory tract RSV infection that can cause apnoea and respiratory failure. Since 2002 we have been giving prophylaxis for RSV, during the November to March period, with palivizumab, a monoclonal humanized antibody, to babies selected for high risk.

Patients and Methods. The following patients were selected for prophylaxis with 15 mg/kg palivizumab once a month for a maximum of 5 months: 1) 2002-03 No. 15 cases with g.a. \leq 30 wks and b.w. \leq 1500 gr.; 2) 2003-04 and 2004-05 No. 22 babies with

g.a. \leq 32 wks and b.w. \leq 1500gr. We also treated 2 babies with g.a. respectively of 34 and 40 wks affected respectively by VACTERL association awaiting for surgery and by repaired aortic coarctation.

Results. Mean g.a. was 28.7 wks (range 23-40) and mean b.w. 1122.9 g (range 600-3500). On a total of 155 administrations we noted 2 light side effects (1.2%): one case with jitteriness for 24 h, and the other with transient oedema in the site of injection. During the period of treatment 5 cases were admitted for bronchiolitis (3.2%), only in one case positive for RSV. No patient died.

Conclusion. We observed few and negligible side effects and a satisfying effectiveness of the drug.

Changes of reactive oxygen species (ROS) in infants after surfactant administration

S. Parmigiani¹, M. Lombardi², S. Pezzoni², V. Arena¹, G. Bevilacqua²

¹Department of Gynaecologic, Obstetric and Neonatal Sciences, University and ²Unit of Neonatology, University Hospital, Parma, Italy

Key words: surfactant; reactive oxygen species; infant

Introduction. Exogenous surfactant (SF) acutely increases PaO₂ and therefore the risk of damage from ROS.

Aim. To evaluate change of ROS value after SF administration.

Patients and Methods. ROS were evaluated on 30 mcl of whole blood immediately after drawing with the FORT test (Callegari 1930, Parma, Italy) that measures total hydroperoxides transformed into their alcoxyl and peroxy forms with colorimetry within 30 min before and 1-2 hrs after the endotracheal administration of poractant-a 200 mg/kg. Eleven infants were enrolled with mean g.a. 27 wks (range 23-37) and mean b.w. 1243.7 g (range 530-3400).

Results. The test was done in 12 cases (3 prophylaxis, 9 therapy). The change between before and after SF administration did not result significant (p=.72). The mean change was of 7.5%. F_iO₂ was decreased after SF administration (from mean 0.6 to 0.46; p=.058) while PaO₂ increased (mean 50.7 mmHg *vs.* 81.2 mmHg; p=.06).

Conclusion. In our cases SF did not increase significantly the value of ROS within 1-2 hrs from administration. This might be due to the rapid decrease of PaO₂ as well to a restricted time interval between measurement. A greater number of cases is needed to confirm such results.

Symptomatic infection from *Helicobacter pylori* in a 3 day old newborn infant

*E. Romanini*¹, *P.L. Bacchini*¹, *S. Parmigiani*¹, *G. Bevilacqua*²

¹Neonatology Unit, University Hospital of Parma, and ²Department of Gynecologic, Obstetric and Neonatal Sciences, University of Parma, Italy

Key words:

Introduction. *Helicobacter pylori* (Hp) is a micro-aerophil Gram (-), bacterium, capable of colonizing the gastric mucosa. The most virulent strains are the CagA (+) ones.

Case. O.M, born at term by induced vaginal delivery for slackening, Apgar 1' = 9, birth weight 2,660 gr., length 43 cm, head circumference 33.5 cm. She was discharged from the Nursery apparently healthy but was readmitted 24 hrs later for the onset of tremors and clonic movements at limbs. Parents referred relapsing regurgitations, that also lasted with elevated rate during the period of hospitalization. The physical exam was normal. The maternal vaginal swab was negative for *Str. agalactiae*. The maternal history revealed hyperemesis of pregnancy and untreated infection from Hp. Glycemia, CBC, hepatic and renal indexes, serum electrolytes, ABG, markers of inflammation, blood ammonia and lactic acid, cutaneous swabs and uroculture, EKG, brain ultrasound and EEG were normal. Also gastro-oesophageal junction ultrasounds did not reveal any alteration. Due to the maternal history the infant is tested for stool Hp structural antigen (HpSA) and for search of serum anti-Hp and anti-CagA that all result positive. Because parents denied consensus to gas-

troscopy the infant was given a triple drugs therapy according to the NASPGHAN guidelines. Presently the baby is thriving and her symptoms have greatly improved. After having completed the 4 weeks of therapy the infection was eradicated.

Discussion. Post-natal transmission of Hp infection probably is by oro-oral route. Some Authors refer a high rate of Hp infection in pregnant women with hyperemesis with a high percentage of CagA (+), as in the present case. Our case is peculiar concerning the extremely early onset of symptoms with the very early positivity for stools HpSA. The search of HpSA has a 97% sensitivity and 98% specificity, warranting the validity of this non-invasive exam. The therapy has been necessary for the symptoms and in order to reduce a possible risk of SIDS reported in these infants.

Conclusions. The infection from Hp in the first days of life is extremely rare. Although endoscopy remains the gold standard for diagnosis, the search of stools HpSA can be a valid alternative both for diagnosis and follow-up of the infection. In the present case, moreover, the precocity of the onset of symptoms suggests a prenatal transmission of Hp, even if there are no data to support such hypothesis.

Webnet survey on apparent life threatening event (ALTE) in the Emilia-Romagna region

M. Lombardi¹, L. Leali¹, S. Parmigiani², G. Bevilacqua¹ and Emilia-Romagna Webnet for SIDS

¹Dept. of Gynecologic, Obstetric and Neonatal Sciences, University of Parma and ²O.U. of Neonatology, University Hospital, Parma, Italy

Key words: SIDS, ALTE, presenting symptoms

Introduction. ALTE is a well defined syndrome in the first year of life that might be considered a precursor of sudden cot death (SIDS), and estimated 10 times more frequent than SIDS. Epidemiologic data on ALTE are scarce and we report the first epidemiologic data in Emilia-Romagna collected via webnet.

Results. The most frequent association of presenting symptoms of ALTE was “colour change + need of vigorous stimuli” (50%). The age at presentation was <2 mths and 57% were females. 48% of the babies were breastfed, 4.5% of ALTE were in the prone posi-

tion, 32% in the supine and 27% in the right lateral. In 40% of ALTE was found a diagnosis that was tied to gastro-oesophageal reflux in 26% of cases.

Discussion and Conclusion. The relatively low rate of ALTE might be due to the fact that some centres are not completely activated. The rate of diagnosis is in line with the literature (Kiechl-Kohlendorfer U., et al – Arch. Dis. Child. 2005; 90:297-300). The position at event does not seem to be correlated with SIDS, as already reported by Gershan W.M., et al (W.M.J. 2002; 101: 39-45).

Different reaction of parents to home monitoring (HM)

L. Leali¹, S. Parmigiani², G. Bevilacqua¹

¹Dept. of Gynecologic, Obstetric and Neonatal Sciences, University and ²Neonatology Unit, University Hospital, Parma, Italy

Key words: ALTE, home monitoring, emotional stress

Introduction. The emotional impact of HM on parents is controversial: some researches found that HM increases the emotional stress while others report that it gives support and comfort.

Aim. To evaluate the emotional impact of HM we carried out a survey on 28 families of babies given HM for ALTE *sine causa*.

Results. Parents answered to Self-Rating Anxiety Scale and a questionnaire. The great majority of parents (95%) perceived the period of HM as stressful from both social and psychological point of view. Seventy percent of parents evidenced only the advantages of HM, while the remaining 30% outlined also some troubles. In particular fathers were in agreement that the alarm allows to intervene at once, but some of them

(30%) reported to be disturbed by the false alarms. Mothers, instead, said in the great majority, that thanks to the HM they could sleep again. However 20% of them found difficult to wean from the monitor.

Discussion. HM generates different reactions in parents during HM after ALTE *sine causa*. In general it has positive consequences on stress, but for different reasons. Mothers, indeed, are more reassured by HM and draw more advantage from it than fathers do, probably because they spend more time alone with the infant.

Conclusion. A different approach to mothers and fathers of infants with ALTE *sine causa* given HM has to be taken in due consideration to improve acceptance of HM.