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A1

Nutritional aspects in Neonatal Intensive Care Unit

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Neonatologists still face the challenge to provide optimal nutritional care to preterm infants and to limit the postnatal growth failure that preterm infants still experiment [1].

Inadequate parenteral and enteral intakes and the fear of metabolic intolerance lead to a cumulative nutrients' deficit in early postnatal period [2]. Limiting early malnutrition is of major importance since poor postnatal growth in preterm infants has been associated with impaired neurodevelopmental outcomes [3,4] and altered body composition development [5]. Body composition of preterm infants seems to be characterized by a lack of fat-free mass deposition [6], which, in turns, is determinant for organ growth and development, particularly the brain. Increasing findings actually support an association between postnatal fat-free mass accretion and neurodevelopment [7].

The transition to extrauterine life inevitably contributes to the higher nutritional needs of the preterm infants [5]. It has been demonstrated that the resting energy expenditure of preterm infants increases by 140% in the first six weeks of postnatal age whereas that of term infants increases by 47% [8]. In addition, the major clinical comorbidities that they often experiment (sepsis, neurological impairment, cardiac diseases, surgical complications, administration of medications and the different environmental conditions they are exposed to) necessarily affect infants' nutritional requirements [9].

The application of standardized nutritional procedures and the attention on individual requirements are of major importance. Several efforts in the last year have been addressed to limit the infants' postnatal growth restriction: nutritional strategies based on more aggressive parenteral nutrition, adequate weaning from parenteral nutrition and optimization of enteral nutrients administration have been reported to improve growth velocity during hospital stay in neonatal intensive care unit [10,11].

Human milk is the first choice for the nutritional support in preterm infants [12]: its several health benefits on immunological, gastrointestinal and neurodevelopmental functions have been deeply reported. Fortification of human milk is required to meet the high preterm infants' nutritional requirements [13]. Recent studies suggest that the non-nutritive oral administration of colostrum is safe and it could positively affect development of innate immunity in extremely preterm infants [14].

Oral feeding is the final milestone to achieve for an infant before leaving hospital; as a consequence its implementation is of huge interest. The non-nutritive sucking stimulation, the promotion of human milk use, a cue-based feeding approach and the limitation of

the negative experiences the hospitalized infants are exposed to, can lead to their earlier achievement of full oral feeding [15].

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A2

Retrocecal appendicitis

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Appendicitis is the most common acute surgical condition of the abdomen. Despite technological advances, the diagnosis of appendicitis is still based primarily on the patient's history and the physical examination. However, some patients may have atypical symptoms and physical findings that may lead to a delay in diagnosis and increased complications. Atypical presentation may be related to the position of the appendix.

The vermiform appendix may occupy several positions in relation to the cecum. The most common positions are descending intraperitoneal (31%-74%) and retrocecal (26%-65%). When the appendix is in the retrocecal position, the signs and symptoms of acute appendicitis may be atypical and mimic pathology in the right flank and hypochondrium, such as acute cholecystitis, diverticulitis, acute gastroenteritis, ureter colic, acute pyelonephritis, and irritable bowel syndrome.

Prompt diagnosis and surgical referral may reduce the risk of perforation and prevent complications. The mortality in non-perforated appendicitis is a rare event, but it may be more significant in very young and elderly patients, in whom diagnosis may be delayed.

Appendectomy may be performed by laparotomy or laparoscopy. Diagnostic laparoscopy may be helpful in equivocal cases or in women of childbearing age, while laparoscopic appendectomy is becoming the preferred approach for any kind of appendicitis.

The laparoscopic intervention has the advantages of decreased post-operative pain, faster recovery, earlier return to normal activity and better cosmetic results. This benefit has been shown through all age groups, but elderly patients in particular experience an advantage with the minimally invasive approach [1].

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A3

Chronic insomnia of childhood: clinical assessment of different phenotypes

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Bedtime problems and night awakenings are common cause of paediatric consultation and sleep disorders in children can compromise quality of life of both children and families.

It is known that chronic sleep deprivations is associated with poorer developmental outcome, overweight and behavioral disturbances.

Clinicians should incorporate questions about sleep into their routine health assessment, and the assessment of insomnia should follow a medical approach. Primary and secondary contributing factors should be assessed, as well as maladaptive behaviors related to sleep.

In order to identify childhood insomnia clinicians must be willing to observe children and listen to them closely. Symptoms of pediatric insomnia may include: difficulties falling asleep, episodes of waking up in the night with inability to go back to sleep or waking up early in the morning.

Patients may be chronically tired or show academic or behavioral difficulties, with hyperactive components.

A careful examination of sleep/wake schedule, abnormal movements or behavior during sleep, and daytime consequences of sleep disruption or deprivation is mandatory.

Sleeping environment and bedtime routines should be examined to identify behavioral issues related to sleep. Polysomnography is not routinely indicated for children with insomnia, but actigraphy can give an objective estimation of sleep parameters.

All medical treatments for chronic pediatric insomnia are off label, but advances in clinical evidence are emerging; behavioral therapies like cognitive behavioral therapy provide non-pharmacologic alternatives that help rewire disrupted sleep patterns and sleep hygiene should be implemented.

The aim of the present talk is to summarize recent advances in the field of clinical pediatric sleep medicine: a phenotype-based classification of pediatric insomnia, based on both genetic and clinical aspects is proposed; clinical evaluation, short time and chronic sequelae are described; several tools for clinical assessment and treatment options of paediatric insomnia, useful in the daily clinical practice of pediatricians, are presented.

A4

The future perspectives of allergen immunotherapy in childhood

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Allergen immunotherapy (AIT) is the only currently available treatment that targets the etio-pathophysiology and may modulate the natural history of IgE-mediated diseases [1-6]. Childhood represents the best timeframe to influence the immune system and alter the progression of allergic diseases during the early phases of respiratory allergic diseases [3,6]. There is evidence that AIT constitutes a suitable therapeutic option to be considered in patients suffering from allergic rhino-conjunctivitis (AR) due to grass pollen and wishing to take advantage of AIT's long-term effect (at least one year after cessation of AIT course) on AR and its potential preventive effect on asthma development [1]. AIT might be a strategy to prevent the development of new sensitization(s) [3,6]. Furthermore, a growing body of evidence support the use of oral immunotherapy as a promising treatment option in children with persistent IgE-mediated food allergy [2,5]. The efficacy of AIT is under investigation also in patients with extrinsic atopic dermatitis, currently with controversial results.

Overall, the interest and the attention to AIT treatment are currently fervent and increasing. However, there are still some methodological criticisms and gaps to be filled in the current body of evidence: a) the regimen of administration and the amount of the maintenance dose are both largely variable; b) the protocols of administration are not standardized; c) the description and classification of side effects is variable among studies and needs to be standardized; d) quality of life and evaluation of health economics are overall missing. All these aspects make difficult to compare each study with another. In addition, the content of major allergen(s) remains largely variable among manufacturers and the availability of AIT products differences among countries. The development of integrated care pathways incorporating (educating and training) primary and secondary care, as well as the availability of high quality AIT products and global actions aimed to develop a harmonized international approach to regulate AIT products are awaited in order to implement AIT in clinical practice. Well-designed studies are awaited in the near future in order to overcome the current gaps in the evidence and furtherly promote implementation strategies with the final goal of a "precision medicine/prevention", tailored on each specific clinical sub-group.

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A5

A platform of new generation

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Background

The improvements in the sanitary field have led to an increase of chronic diseases in spite of acute ones. This trend has generated the knowledge of co-morbidity of the primary disease. Furthermore, as known, chronic diseases affect mostly adults, who suffer more than children the hospitalization phase. This is the reason why, recently, the telemonitoring, which is a kind of remote assistance, is really starting to catch on. In a first phase just single devices have been adopted. Nowadays technologies let us to use platforms, based on a distributed system. A distributed system is a model in which components communicate and coordinate their actions by passing messages through bluetooth connection. The components interact with each other in order to achieve a common goal.

Materials and methods

The Vivisol telemedicine platform allows the unit to perform both telemonitoring and telediagnosics. The integrated medical devices,

which are CE certified, are the following: spirotec spirometer/spirodoc spirometer, nonin 9560 pulse oximeter, H55 iHealth bluetooth scale, 3MLitman stethoscope, ForaCare thermometer, iHealth weight glucometer, iHealth sphygmomanometer.

Patients will make measurements from the home through devices. All the measurements will be read by the doctor or by a 24/24 operating call center that will perform the triage and then, if needed, doctors will be called

Results

It is expected, as already seen in other projects, to obtain important results that can be summarized in the following points: fewer accesses to the hospital, lowering of vital parameters, autonomy of the patient who will learn to manage the symptomatology better.

Conclusions

The introduction of a platform, which can be easily assembled and used, guarantees the patient greater security in the management of home-based therapies and an immediate recognition of critical problems, which will allow to have a clinical stability and therefore also a reduction in cost management by the national health system.

A6

The role of family pediatrician

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Obstructive sleep apnoea (OSA) is a common condition of childhood with significant associated morbidity. The comprehensive evaluation of children who present with suggestive symptoms involves the overnight recording and assessment of both sleep and respiration by polysomnography in a sleep laboratory. The common symptom of pediatric OSAHS include snoring, restless sleep, struggling to breathe, abnormal paradoxical chest/abdomen motion, mouth breathing, failure-to-thrive. Obesity and excessive daytime sleepiness are present. The studies demonstrate that pediatric OSAHS are characterized by partial upper airway obstruction, more or less apnea and associated with staged desaturation. Apnea hypopnea index (AHI), lowest oxygen saturation (LSaO2) and desaturation index below 90% (SIT90%) are very important factors to measure about serious degree of pediatric OSAHS. Physical examination, subjective symptoms and clinical history, these three items were used to create a sleep clinical score (SCS). SCS may effectively be used to screen patients as candidates for polysomnography study for suspected OSA syndrome, and to enable those with a mild form of sleep disordered breathing to receive early treatment.

A7

Health and environment

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The environment in which we live has been progressively contaminated by numerous man-produced chemical substances from a variety of sources that are responsible for damage to our ecosystem and population health. In particular, numerous epidemiological studies and biological models have suggested the possible interference of these chemical substances on hormonal systems in human beings. Many international organizations that address environmental health issues have evidenced the importance of endocrine disruptors, defining them as "any exogenous substance or material that can alter one or more functions of the endocrine system, subsequently causing adverse effects on the health of a human being or his progeny". These organizations have stressed the need to strengthen research in this field and the importance of applying, in the absence of definitive data, the principle of precaution particularly in critical biological periods such as the prenatal period and the first years of postnatal life. Presently, more than 100000 chemical substances exist on the market and at least 1000 of these can act as endocrine disruptors; the most common are identified as pesticides, industrial products