HOSPITAL-ACQUIRED PNEUMONIA IN CRITICALLY-ILL CHILDREN: INCIDENCE, RISK FACTORS, OUTCOME WITH INSIGHT ON EMERGENCY DIAGNOSIS BY MULTIPLEX POLYMERASE CHAIN REACTION

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Hospital acquired pneumonia (HAP) is the most frequent hospital-acquired infection in critically ill patients. NNIS system reported that HAP accounts for 31% of all nosocomial infections acquired in medical ICUs. Increasing incidence of infections by antibiotic-resistant pathogens contributes to higher mortality, longer ICU stay and higher costs. So we aimed to identify the incidence of HAP, its risk factors, and its effects on outcome, we evaluated as well the usefulness of multiplex polymerase chain reaction (m-PCR) as a tool for emergency diagnosis of HAP.

We examined all consecutive admissions to Pediatric ICU from February 2010 to August 2010. Patients were diagnosed to have HAP when their Clinical Pulmonary Infection Score (CPIS) index was more than 6. Blood and endotracheal aspirate (ETA) were tested for bacterial pathogens by microbiological cultures and multiplex PCR simultaneously.

Results Twenty five patients out of 90 admissions (27.7%) developed HAP during the observation period, with incidence rate of 13 per 1000 patient days and overall mortality of 56%. Gastro-esophageal reflux disease (GERD), mechanical ventilation (MV), endotracheal reintubation and sedation were the main recorded risk factors for HAP. Multiplex-PCR showed better sensitivity and positive predictive value than bacterial culture for etiological diagnosis of HAP. Acinetobacter and Klebsiella pneumoniae were the most common identified pathogens.

Conclusion Hospital-acquired pneumonia adversely affects patients outcome in our setting. Moreover, m-PCR permits simultaneous detection of several bacterial pathogens in a single reaction which can optimize the emergency diagnosis of HAP and can improve etiology-directed clinical management of bacterial pneumonia.
Background and Aims Bone metabolism involves understanding many factors, especially during puberty, when bone turnover is significant and the bone mass peak must be achieved as a protective factor of future bone health. The objective was to evaluate the behavior of formation and resorption bone biomarkers (BB) in function of biological maturation in female adolescents.

Methods Evaluation of formation and resorption BB, osteocalcin (OC), bone alkaline phosphatase (BAP) and carboxyterminal telopeptide (S-CTX) by correlating them with bone mineralization, bone age and pubertal development in healthy female adolescents. Seventy-two volunteers were subdivided into groups according to bone age and pubertal maturity (10–11 years; 11–12 years; 12–13 years; 13–14 years; 14–15 years; 15–16 years; 16–17 years; 17–18 years; 18–19 years; 19–20 years) and when adolescents were in the B2-B3 Pubertal Stage (Tanner stage) and BMD values were evaluated:

1. 10–11 years and when adolescents were in the B2-B3 Pubertal Stage (Tanner stage) and BMD values were evaluated:

2. 10–11 years (n=12), 12–13 years (n=12), 13–14 years (n=15), 14–15 years (n=15) and 16–19 years (n=29). The following were evaluated: weight (kg), height (m), BMI (kg/m²), calcium intake (3-day 24h food recalls (mg/day)), puberty events (Tanner stages), serum OC (ng/mL), BAP (U/L), S-CTX (ng/mL) and bone mineral density (BMD) as calculated by DXA (g/cm²) in the spine (L1-L4), proximal femur and whole body. The project was approved by the UNESP Ethics Committee.

Results BB showed similar behaviors, with higher mean values for 10–12 years and when adolescents were in the B2-B3 Pubertal Maturation Stage (B2: BAP=110.16 U/L, OC=83.81ng/mL, S-CTX=1.66 ng/mL and B3: BAP=136.50 U/L, OC=93.15ng/mL and S-CTX=1.88 ng/mL; p<0.001). Mean BB values decreased with advancing BA and pubertal maturity.

Conclusions BB showed parallelism with peak height velocity and significant negative correlation with BMD in the different evaluated sites, with chronological and BA; higher BMD values correlated with lower bone biomarker values.

428 RELATIONSHIP BETWEEN BONE AGE AND PUBERTAL BREAST STAGE TO BONE BIOMARKERS AND BONE MINERAL DENSITY IN HEALTHY BRAZILIAN FEMALE ADOLESCENTS

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429 THE LEVEL OF ADOLESCENT DEPRESSION AMONG TEENS IN SERBIA

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430 BOERHAAVE’S SYNDROME (SPONTANEOUS ESOPHAGEAL RUPTURE) AN UNUSUAL SEQUALE OF A COMMON SYMPTOM

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Boerhaave’s syndrome (BS) or spontaneous esophageal rupture is rare in children. It is thought to result from a sudden increase in the intraesophageal pressure during retching combined with negative intrathoracic pressureClassically BS presents with vomiting, subcutaneous emphysema and thoaco-abdominal pain (Mackler’s triad). We reported a 14 year old girl who was previously well presented to a Tertiary Care Centre Emergency Department with a 24 hour history of retrosternal chest pain and upper abdominal discomfort following three days of frequent retching and intense vomiting. She was in moderate pain and afebrile; heart rate was 100 per minute with respiratory rate 24 per minute. Palpation of both suprascapular fossae and her left axillary fossa revealed crepitus indicating the presence of subcutaneous emphysema. Auscultation of cardiorespiratory system was normal and her Abdomen revealed mild epigastric tenderness with no rebound phenomenon, masses or organomegally. Her chest x ray revealed evidence of subcutaneous emphysema and mediastinal air, an upper GI study with water soluble contrast showed extravasation of the contrast from the distal segment of the esophagus into the mediastinum compatible with the diagnosis of spontaneous esophageal rupture or Boerhaave’s syndrome. She was admitted and treated conservatively with intravenous fluids, antibiotics and nil per os with resolution of her symptoms in 48hours and resolution of mediastinal air in 72 hours. Subsequent endoscopy was grossly and histologically normal.

431 THE EFFECT OF SPORTIVE ACTIVITY ON BONE MINERAL DENSITY DURING ADOLESCENCE

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