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PS219

Reactivity of the rat distal colon to autoantibodies targeting angiotensin type I receptors

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Aim: To describe the reactivity of the rat distal colon to AT1R-Abs and to compare it to that of Ang II.

Introduction: Agonistic IgG (IgG1 and IgG3 subclasses) autoantibodies against the angiotensin II type 1 receptor (AT1R-Abs) have been associated with hypertension, preeclampsia, placental ischemia, renal-allograft rejection and systemic sclerosis. It is though that AT1R-Abs mimic the action of angiotensin II (Ang II) and contribute to the physiopathology of several diseases and the associated complications.

Methods: Male Wistar rats (9–12 weeks of age) were killed by decapitation and strips of the distal colon were mounted in organ baths along their longitudinal axis. Tissues were stretch to 1 g of resting force and isometric responses to AT1R-Abs (25, 50 and 100 mg/dl) obtained from sera of systemic sclerosis and renal-allograft rejection patients and to Ang II (10pM-1 μM) were recorded on a polygraph. The response of Ang II were expressed as % of the response to 125 mM potassium chloride (KCl).

Results: AT1R-Abs caused a long-lasting response. Very often, AT1R-Abs induced an increase in the frequency and amplitude of distal colon spontaneous contractions. Occasionally, AT1R-Abs caused a slight decrease in the resting tone and, more rarely, they caused colonic contraction. The effects of the AT1R-Abs seem to be attenuated by candesartan. The pattern of the response to Ang II was different; Ang II caused a fast developing contraction of the colon with an Emax of 64.37 ± 12.68 (%KCl) and EC50 of 1.22 ± 0.20 nM.

Conclusion: AT1R-Abs change the normal rhythm of spontaneous contractions of the rat distal colon but more studies are necessary to evaluate whether this reactivity is mediated by AT1 receptors. Moreover, Ang II cause a marked AT1 receptor-mediated contraction of the rat distal colon.

Public Health & Medical Informatics Paralell Oral Session
Friday, September 15th, 14h00

PS224

Intestinal colonization by antibiotic-resistant Gram negatives in children

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Aim: This study aims to further the knowledge of antibiotic-resistance in the commensal intestinal flora of children by studying the intestinal colonization by antibiotic-resistant Gram negative bacteria in portuguese children.

Introduction: Although it is known resistance to antibiotics is a growing problem worldwide, this scenario which constitutes a risk factor for infectious disease is an under-characterized reality in Portugal.

Methods: Faecal samples of 29 healthy children (4 months to 12 years-old) were collected from randomly selected localities of Portugal: Viana do Castelo ($n = 8$), Porto ($n = 6$), Braga ($n = 14$), Leiria ($n = 1$), from September 2016 to March 2017. Risk factors were assessed by questionnaire, namely antibiotic usage history and direct contact with dependent elders. Isolates were selected by spreading saline suspension (100 μL) on MacConkey agar and Mac-Conkey agar with ampicillin (100 μg/mL), cefotaxime (2 μg/mL), and meropenem (1 μg/mL). Susceptibility profiles to β-lactam and non-β-lactam antibiotics were assessed by disk-diffusion methods according to the EUCAST. Presumptive identification of the isolates was performed with CHROMagar-Orientation culture media.

Results: In a total of 29 isolates (lactose fermenters ($n = 22$) and lactose non-fermenters ($n = 8$)), 28 showed resistance to amoxicillin and 13 to amoxicillin with clavulanic acid. Of the 29 children analysed, 17 showed resistance to at least one of the antibiotics studied. Four children were colonized with bacteria resistant to cephalosporins ($n = 8$), two of which have daily contact with elders.

Conclusion: The results indicate that young children might be an important reservoir of commensals with clinically relevant resistance mechanisms. The clarification of this reality in Portugal could prove essential in the fight against silent dissemination of these threats and persistent infections.

PS187

Is the oral mycobiome of young adults influenced by the delivery mode?

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Aim: To investigate whether the mode of delivery influences the oral yeast colonization in young adults.

Introduction: The human microbiome is a complex ecosystem that varies considerably across the body and between individuals.[1] Postnatally the child is exposed to microorganisms from maternal and environmental sources and influenced by infant feeding, developing its own microbiome that will continue evolving throughout life.[2] Several studies have been carried out to determine the influence of the mode of delivery on the oral microbiome, and some influence on bacterial colonization has been verified.[3,4] However, the influence on oral fungal colonization is still unknown.

Methods: In 200 healthy students from the Faculty of Dentistry of University of Porto, colonization by yeast in the oral cavity was evaluated by collecting unstimulated saliva. Yeast isolation was performed by pour-plaque technique using Sabouraud Agar medium supplemented with chloramphenicol and ChromAgar Candida medium for species identification. Statistical analysis was performed using the chi-square test and t-test for independent samples.

Results: Participants' mean age was 21.61 ± 1.86 years old, with a total yeast prevalence of 37.5%. Candida albicans was the most isolated species present in 76.5% of the colonized participants. In comparison to caesarean section, the participants born by normal delivery presented higher oral yeast prevalence (41.6% vs. 25.8%, $p = 0.035$) and higher oral yeast load (13.68 ± 38.02 vs. 1.69 ± 0.62 Log CFU/mL, $p = 0.030$).

Conclusion: Our results suggest that delivery mode influences the oral mycobiome throughout life, specifically, normal delivery appears to promote the oral yeast colonization.

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PS034

Why, how and when are patients with Chromosomal anomalies hospitalized?

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Aim: We aim to describe Chromosomal anomalies (CA) related hospitalizations characteristics and specific trends in order to understand why, how and when are these patients hospitalized.

Introduction: CA affect approximately 2% of the world population.[1] Due to this low prevalence not many studies regarding hospitalizations are available in this set of conditions. Hospitalizations represent an overall health and prognosis indicator that may allow the implementation of specific health care policies regarding prevention measures to avoid CA-related hospitalizations.

Methods: A retrospective observational study was performed using a national hospitalization database that gathers all public hospital admissions between 2000 and 2014. CA were selected based on codes $758.0\times$ to $758.7\times$ codified by the International Classification of Diseases – 9th Revision – Clinical Modification. Birth date, sex, charges, admission/discharge date, discharge status, primary/secondary diagnoses were analyzed for each specific CA.

Results: CA related hospitalizations accounted for 0.08% of all the hospitalizations. Down syndrome represented 75.9% of all CA-related hospitalizations and 80.2% (approximately 30M€) of all the charges attributed to CA related hospitalizations. The median age of CA-related patients was 9.0 years old. The leading causes of hospitalization in different CA varied between pneumonia (3.6–18.6%) and live birth related diagnoses (7.9–52.5%). Mean number of hospitalizations ranged from 1.0 to 2.1 per patient and mean charges per hospitalization varied from 2 339 to 4 520 €.

Conclusion: CA hospitalizations have high mean charges per hospitalization, high length of stay and high in-hospital mortality. Down syndrome accounts for the majority of CA hospitalizations, representing the CA with higher economic burden in the health system. Klinefelter syndrome hospitalizations occur at a younger age than the described mean age of diagnoses in all Klinefelter syndrome patients, a novel finding not previously described.

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PS195

Efficiency of web application and spaced repetition algorithms as an aid in preparing to practical examination of histology

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Aim: The aim of this study is to evaluate impact of using web application on the results of histology practical exam as well as to check if the SuperMemo-based algorithm is a useful tool in medical education.