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Non-invasive fetal RHD genotyping: Validation of the method with 200 patients

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Background: Non invasive fetal RHD genotyping is an important tool to assess the risk of fetuse's hemolytic disease of anti-D allo-immunized pregnant women by non invasive method

Method: A method of genotyping has been developed in the laboratory of Lyon-GHE according to Minon's team: Exon 4, 5, and 10 are amplified by real time PCR. At first, genotyping results of 200 pregnant women have been compared with RH1 phenotype at birth.

Results: The most important parameters of validation have been tested: The sensibility and the specificity; the negative predictive value; the correlation study permitted to define criteria of biological interpretation. The validation of this method permitted to determine critical points and the limits of the method due to the minor amount of fetal DNA in the maternal plasma and existence of many variant forms of the RHD gene.

Conclusion: Fetal RHD genotyping can optimize the obstetrical management of women RH -1 allo-immunized by a simple, reliable and minimally invasive method

Biography

I am an M.D/PhD in Biology. I work currently in a laboratory of a Health Clinical Center, CHU of Lyon. I specialize in immuno-haematology as well as in NIPT: fetal RHD genotyping on maternal plasma. I was invited to present this at several international conferences (ESHG 2012) and I am the author of a recently published article (Non-invasive fetal RHD genotyping: Validation of the method with 200 patients, TCB, 2014).

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Air pollution, innate immunity and inflammation

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Epidemiological studies have established the relationship between air pollution exposure and adverse health effects. Studies have also shown that, significant part of the air pollution induced adverse health effects is inflammatory in nature. However, the biological pathways of air pollution induced inflammation and different facets of inflammation are poorly understood. A new approach to understand air pollution was attempted which induced inflammation in which, air pollution associated inflammation is compared with inflammation induced by a model compound, endotoxin.The reason to select endotoxin as a model will be explained. But, this simplification may not take account of possible complex interactions of air pollution components with host, but could be enough to shed light on the mechanisms of inflammation due to air pollution. The role of innate immune receptors of endotoxin, signalling pathways and phenomena such as endotoxin tolerance in air pollution induced inflammation were explored. The study shows that endotoxin and associated signalling molecules play an important role in air pollution induced inflammation. The results also show that, the small amount of endotoxin present in air pollutant samples is important component in air pollution induced inflammation. Low level endotoxemia and inflammation among a group of workers with elevated levels of exposure is reported. The average plasma endotoxin concentration in the group of workers was an order of magnitude higher than that observed in the controls. However, the study results show that, despite of presence of endotoxin in the circulatory system, tolerance or priming is not observed in ex-vivo stimulation.

Biography

Gangamma S has completed her PhD from Indian Institute of Technology, Bombay. She is an Assistant Professor in the Department of Chemical Engineering, NITK Suratkal. She is working in the area of environmental immunology and the focus is to understand the air pollution induced inflammation. She is actively involved in teaching environmental immunology at Post-graduate level. She has significant experience in aerosol measurement methods, development of lung deposition models, aerosol instrumentation development and in environmental health studies.

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