Hepcidin-25 in human saliva, bile, ascitic and pleural fluid

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A research team from United Kingdom described the use of radioimmunoassay to demonstrate and measure hepcidin-25 in various biological fluids. They provided evidence for the first time of the presence of hepcidin in human saliva, bile, ascitic and pleural fluid.

Recent studies have highlighted the importance of hepcidin in iron metabolism, particularly anaemia of chronic disease and iron overload. There have also been reports of its expression in various proinflammatory disorders and various organs, linking it to innate immunity and iron metabolism. To date, hepcidin has only been shown to be present in serum and urine of humans.

A research article to be published on May 7, 2010 in the World Journal of Gastroenterology addresses this question. The research team led by Professor Jayantha Arnold, from Department of Gastroenterology, Ealing Hospital NHS Trust, United Kingdom, reported that hepcidin is found in various biological fluids.

Hepcidin radioimmunoassay (RIA) has been shown to be a reliable way to quantify hepcidin in serum and body fluids. Using this RIA, the researchers demonstrated the presence of hepcidin in saliva from 17 healthy volunteers. The concentration detected was lower than serum levels. This may have significance in oral infections in individuals with an inability to modulate hepcidin in saliva when faced with microbial invasion. RIA also demonstrated the presence of hepcidin in human bile. The concentration detected was around half of that seen in serum. This

may have significance in being a possible underlying factor as to whether or not patients develop gallstones or biliary infections. The actual antimicrobial activity of biliary hepcidin needs to be studied further. Hepcidin was also detected in pleural and peritoneal fluid in patients with diseases such as cirrhosis of liver and pneumonia. Again this has relevance to whether there is an individual susceptibility to infection dependent on hepcidin response to initial microbial invasion.

The study demonstrated that by understanding how hepcidin is expressed and by blocking its expression, there may be a therapeutic potential in patients with anaemia of chronic inflammation. Further application could be that secondary infection of pleural and ascitic fluid complicating underlying diseases may be better understood by studying hepcidin levels in infected and non-infected patients.

More information: Arnold J, Sangwaiya A, Manglam V, Geoghegan F, Thursz M, Busbridge M. Presence of hepcidin-25 in biological fluids: Bile, ascitic and pleural fluids. World J Gastroenterol 2010; 16(17): 2129-2133, www.wjgnet.com/1007-9327/full/v16/i17/2129.htm

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