Technology Offer

Novel diagnostic for Peripartum cardiomyopathy (PPCM) in pregnant women

Reference Number: TO 15-00411

Challenge

About 4% of all pregnant women are affected by cardiovascular diseases such as Peripartum cardiomyopathy (PPCM). PPCM is of particular importance, because it is a disease with unknown etiology occurring in previously healthy women towards the end of pregnancy. Typically, PPCM is characterized by left ventricular systolic dysfunction and subsequent heart failure making it a potentially life-threatening condition. Although patients have an increased risk for sudden death, a timely treatment significantly increases the likelihood of recovery. However, determination of PPCM is challenging due to a wide variety of related cardiac disease phenotypes. Diagnosis is currently based on exclusion and is therefore frequently delayed leading to an underestimated prevalence. Thus, it is of major importance to identify a specific and robust biomarker for an early diagnosis of PPCM in pregnant women.



Technology

The present invention comprises a diagnostic approach for new assessment of PPCM. reliable Extensive analysis revealed significantly elevated PAI-1 (plasminogen activator inhibitor-1) levels during pregnancy with a around delivery. peak Consequently, the novel method is based on detection of altered PAI-1 levels in plasma or serum samples from women within the first days past delivery. Moreover, clinical investigations

demonstrated a high probability that PPCM mainly affects women carrying a sequence polymorphism in the PAI-1 gene. This genetic modification is expected to cause an altered PAI-1 level during pregnancy with a subsequent cardiac impairment. Thus, genotype analysis may be performed as part of routine examinations to identify patients at risk. In summary, PAI-1 is the first available biomarker for reliable diagnosis of PPCM in pregnant women even before disease onset and it represents a valuable tool for the timely therapy of affected patients.

Commercial Opportunity

In-licensing or collaboration for further development is possible.

Developmental Status

Initial proof-of-concept studies have been performed at Hannover Medical School.

Patent Situation

Patents have been granted in Europe (EP 3347721B1, national validation in DE, CH, FR, GB, IT) and USA (US 10,775,389) with priority of 2015.

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Further Reading

Nonhoff J, Müller M, Stapel B, Kiyan Y, Dumler I, Haghikia A, Hilfiker-Kleiner D. 2016. Plasminogen activator inhibitor-1 - A potential novel biomarker and therapeutic target for peripartum cardiomyopathy. *Clin Res Cardiol 105, Suppl 1, DOI 10.1007/s00392-016-0967*.

Hilfiker-Kleiner D, Haghikia A, Nonhoff J, Bauersachs J. 2015. Peripartum cardiomyopathy: current management and future perspectives. *Eur Heart J*. 36:1090-1097.