The following link validates the fact that preeclampsia is a major factor for women's strokes.

https://www.preeclampsia.org/advocacy/144-research-news/325-preeclampsia-doubles-womens-stroke-risk

The information provided below can be used by qualified computational biology to verify how behavioral health factors contribute to preeclampsia with strokes frequently being outcomes.

The application of quantum computational biology to neuropeptide interactions identified, with near certainty, that alpha-1-microglobulin is one of the three globulins (alpha-1 microglobulin, beta-2 microglobulin and gamma globulin) that comprise the constituents of the catecholamines and DNAJB3 that regulates DNA binding.

We assert that over-focus increases norepinephrine as part of neuropeptide Y in logic and an imbalance with emotion neurohormones in BDNF from pancreatic polypeptide results in stress that disrupts PYY that regulates autophagy.

The interactions between the neuropeptides can be discussed with qualified computational biology professionals.

https://medicalxpress.com/news/2019-06-clinical-trials-preeclampsia-treatment.html

JUNE 24, 2019

Clinical trials beginning for possible preeclampsia treatment

by Lund University

For over 20 years, a team of researchers at Lund University has worked on developing a drug against preeclampsia—a serious disorder which annually affects around 9 million

pregnant women worldwide and is one of the main causes of death in both mothers and unborn babies.

Now the researchers have published a study in the journal *Scientific Reports* that opens up opportunities for further research towards a drug they hope will save the lives of many pregnant women in the future. The study was conducted in a transgenic mouse model of preeclampsia, the results are important since they confirm previous studies by the research team showing that alpha-1-microglobulin has potential therapeutic effects in preeclampsia. Trials on patients have recently been launched.

"The treatment, based on the human body's own scavenger protein A1M (alpha-1-microglobulin) which is present in all vertebrates, has a good effect on the disease symptoms such as high blood pressure and protein leakage from the kidneys into the urine. We also observed an improvement in organ function in the kidneys and the placenta. We saw no indication of side effects. In the study now published using the preeclampsia mouse model, which best reflects the various stages of the disease during pregnancy, the mice develop serious preeclampsia in early pregnancy," says Stefan Hansson, professor of obstetrics and gynaecology at Lund University and senior consultant physician at Skåne University Hospital in Lund, who is the principal investigator behind the study together with colleagues including senior researcher Lena Erlandsson.

"This feels like a milestone in our research, as patient studies, known as Phase 1 clinical trials, began in the spring to establish the properties of A1M in order to develop a drug."

Together with his colleague, Bo Åkerström, professor of infection medicine, Stefan Hansson started the studies on A1M several years ago and observed that A1M stopped the leakage of protein in the kidneys. They also saw that the placenta was repaired and that the destroyed structures in the cells' smallest components were restored.

"In preeclampsia, the cells of the placenta looked approximately as though all the trees had been blown over in a storm, and after treatment with A1M they stood up again. When I saw that for the first time, I became a scientific believer," explains Stefan Hansson.

The date for a potential drug to see the light of day is still uncertain.

"Research takes time and costs a lot of money. Bo Åkerström has spent his entire professional life on understanding and describing the properties of the A1M protein and, in the last ten years, we have been studying it in the laboratory as a drug candidate. The results from the clinical trials will be crucial," concludes Stefan Hansson.

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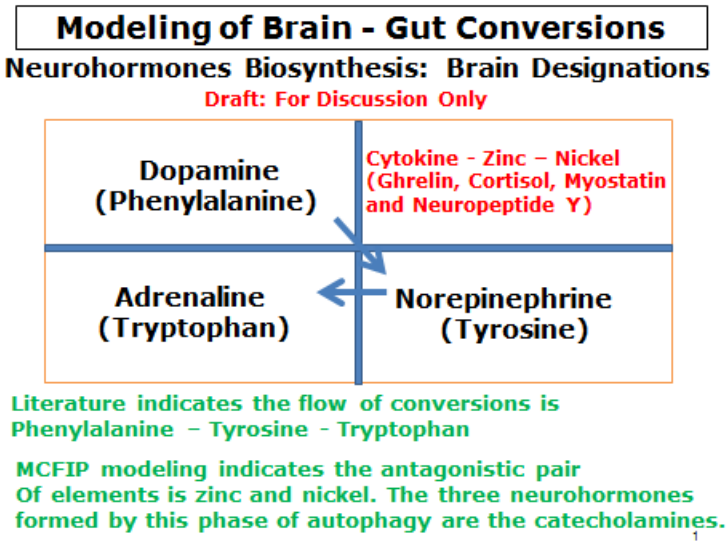
Primary causes of preeclampsia are "hidden in plain sight" and can be identified through retrospective review of existing research.

Two examples are provided below for use as part of discussion purposes.

- BCR-Abl is a marker for preeclampsia. Its role in copy errors of DNA is outlined in the following link for use as part of discussions with interested parties. http://www.mcfip.net/upload/Epigenetics%20-%20DNA%20Repair%20-%20Copy%20Errors.pdf
- Adrenomedullin is a marker for preeclampsia. It is an iron - sulfur cytokine that is known to be associated with vasodilation. With minimal effort, nitric oxide (a vasodilator) can be correlated to iron-sulfur as the constituents of IL-12 the precursor for one of the DNA binding activities that are known collectively as NUP98 or FOXA9. Disruption of this cytokine, its byproducts or DNA binding counterparts can be established as copy error mutations that are a prime factor for preeclampsia.

Refer to the following for discussion purposes.



Note: Interested parties can provide other "markers" that exist in studies. We can transpose them into epigenetic activity to provide researchers with the foundation from which to prevent or treat (cure) the condition.

https://medicalxpress.com/news/2017-09-preeclampsia-boost-heart-disease-blood.html

Preeclampsia may boost heart disease risk by altering blood vessels

September 12, 2017 by Katie Bohn

Preeclampsia may permanently change the blood vessels of women who experience the condition during pregnancy, boosting their lifelong risk for cardiovascular disease, according to Penn State researchers.

In a study, researchers compared women who had healthy pregnancies with those that experienced preeclampsia, a condition in which blood vessels around the uterus constrict during pregnancy and can result in symptoms that include high blood pressure, kidney damage, swelling and headaches.

The researchers found that after a pregnancy, the blood vessels of women who experienced preeclampsia function differently than women who had healthy pregnancies, which could help explain why women who have had preeclampsia go on to have a higher risk of cardiovascular disease.

"We were able to show that even though the symptoms of preeclampsia go away once the woman gives birth, there's still an underlying dysfunction in the blood vessels," said Anna Stanhewicz, a post-doctoral fellow in the College of Health and Human Development. "This suggests that something happens during a preeclamptic pregnancy that permanently changes the way blood vessels function."

Stanhewicz said the findings—published in the current issue of *Hypertension*—could help lead to better prevention and treatment of cardiovascular disease, which is the leading cause of death for women in the United States. According to Stanhewicz, preeclampsia—which affects approximately 7 percent of pregnant women in the U.S.—increases a woman's risk for developing heart disease to that of a lifelong smoker's. While previous research has examined the effects of preeclampsia on the blood vessels of mice and rats, Stanhewicz and the other researchers wanted to look at the effects of the condition on human blood vessels.

"We wanted to see if vessel dysfunction does in fact still occur after pregnancy. If we compare how well the blood vessels are functioning in women that had preeclampsia to women who had a healthy pregnancy, do we see a difference?" Stanhewicz said. "And also, if we can see a difference, what is contributing to that?"

The researchers recruited 24 participants, 12 of which had experienced a healthy pregnancy and 12 who had preeclampsia. In a lab, the researchers placed a special fiber through the top layer of skin on the participants' arms, which allowed them to apply substances locally and test the function of blood vessels just under the skin.

When the researchers applied acetylcholine—a substance that causes blood vessels to dilate, or become bigger—they found that the vessels of women who had preeclampsia opened about 50 percent less than those of women who had healthy pregnancies.

"This answered one of our major questions, which was whether the blood vessels of women who experience preeclampsia work differently after their pregnancy. We found that yes, they do," Stanhewicz said. "But we also wanted to know more about why this was happening."

Taking clues from previous animal studies, the researchers applied angiotensin II—a naturally occurring substance in blood that helps blood vessels constrict, or become smaller—and found that the blood vessels of women who had preeclampsia constricted about 20 percent more than women who had normal pregnancies. Stanhewicz said this suggests that women who have had preeclampsia are more sensitive to angiotensin II. In a final test, the researchers applied losartan, a commercially available drug used to treat people with high blood pressure, to the blood vessels and measured its effects.

"We found that when we inhibited the action of angiotensin II with the losartan, it didn't affect the women who had healthy pregnancies, but it improved blood vessel function in the women who had a preeclamptic pregnancy," Stanhewicz said. "By blocking that excessive constriction, we were able to functionally restore the dilation response."

In the future, Stanhewicz said she would like to further study using losartan in women who have had preeclampsia to explore if it could be a possible treatment strategy. "Even though these women who have had preeclampsia appear healthy after they deliver and their blood pressure returns to normal, we would like to give them an oral intervention with losartan and see if that improves their microvascular function," Stanhewicz said. "Hopefully, that would then prevent the accelerated progression of cardiovascular disease."

Explore further: **Reflux tablet could save 60,000 lives lost to preeclampsia**

Journal reference: Hypertension