

New Test May Uncover Deadly Hypertension in Pregnancy

Novel biomarker diagnostic test could revolutionize the diagnosis of pre-eclampsia, a complex condition that can be fatal if undiagnosed during pregnancy



NEWS RELEASE

(From

Collaborators at [Cottage Health System](#) and UC Santa Barbara's [College of Engineering](#) have identified biomarkers that may yield a revolutionary diagnostic test for pre-eclampsia, a complex and potentially life-threatening hypertensive condition affecting 5% of pregnancies worldwide.

Alex

Soffici, Professor of the most common dangerous complication of pregnancy, pre-eclampsia is potentially fatal and often mimics or is confused with other pregnancy-related conditions such as swelling, gastric pain, and high blood pressure. Pre-eclampsia can lead to eclampsia, which carries a maternal mortality rate of 1.8 percent worldwide.

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Through a partnership funded by the Santa Barbara Cottage Hospital Research Grant Program, the study was led by Dr. Alex Soffici, perinatologist with Santa Barbara Cottage Hospital, and [Patrick Daugherty](#), professor and vice-chair of the [chemical engineering](#) department at UCSB. Plasma samples were collected over a period of two years from both normal-outcome and pre-eclampsia pregnancy patients at Santa Barbara Cottage Hospital, and then analyzed by UCSB graduate researcher [Serra Elliott](#) to identify candidate biomarkers.

"We are seeing the early stages of something that could be quite big," said Soffici. "Therapeutics for pre-eclampsia are on the horizon."

The group discovered that certain antibodies are present in the blood of patients with pre-eclampsia, but not in women with healthy pregnancies. Their results suggest that this new diagnostic test could effectively distinguish pre-eclampsia syndrome from conditions with similar symptoms. The collaborators' research continues in an ongoing study.

"We developed a separation process to sift through enormous numbers of distinct molecules present in blood to identify those few that are uniquely present in patients with pre-eclampsia," explained [Daugherty](#). "Since our process simultaneously identifies biochemical reagents that can capture the disease biomarkers, there is an opportunity to create an effective diagnostic test for this prevalent disorder and possibly for other diseases where definitive tests are not yet available."

Elliott, lead scientist on the project, recently presented their findings at a conference for the International Society of the Study of Hypertension in Pregnancy in Geneva, Switzerland. "There are very few groups in the world working on this technology and we have found it to be exactly what the international research community was looking for. This project has great promise," commented Soffici.

Soffici added, "We are grateful to the Cottage Health System administration and to UCSB leaders for recognizing the great value in cooperation between clinicians and researchers, and for breaking down many of

the barriers that previously existed for this kind of project.?

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