Ambient Air Pollution Not Linked to Risk of Stillbirth

By Lila Abassi — May 26, 2016

In another attempt to spuriously correlate one thing with another, a beloved hobby of epidemiologists, a recent report [1], published in *Occupational and Environmental Medicine*, provides data linking increased levels of air pollution to a rise in stillbirths. To date, what has been published has shown only weak associations between air pollution and stillborn fetuses.

The current report reviewed 13 previously conducted studies — only three of which had been meta-analyzed — on ambient air pollution exposure and stillbirths. What the investigators focused on was particulate matter less than 2.5 micrograms (PM$_{2.5}$), nitrogen dioxide, carbon monoxide, PM$_{10}$ and ozone – all of which they concluded were associated with an increased risk of stillbirths. The results did not reach any statistical significance, but the authors argue that the overall effect depicts a positive association between exposure to air pollutants and stillbirth risk.

The sad part of this silly study is that people will read the title and the conclusion and not look at the rest of the data - and media will take off. Inevitably the public will be misled. I am not entirely certain why this was even published and it is borderline irresponsible to have done so — in my humble opinion.

The problem with this kind of study is that it is virtually impossible to properly quantify individual level of exposure to harmful ambient substances. Not all studies done adequately assess other potentially harmful exposures such as alcohol, occupation, stress, maternal obesity, or diabetes. It seems that there is a plethora of confounding variables that can never be fully accounted for. Typically, there is greater air pollution in denser populated urban areas – generally known to include people of lower socio-economic status – a population with more risk factors to begin with.

According to an editorial in the same journal, Dr. Marie Pedersen [3], of the Centre for
Epidemiology and Screening, University of Copenhagen states, “Stillbirth is one of the most neglected tragedies in global health today, and the existing evidence summarized by [the authors] deserves additional investigation.” This is a common go-to recommendation for every epidemiological study. She continues “If evidence of an association between ambient air pollution and stillbirth is confirmed in future studies, it would be of major public health importance.” Clearly, nobody will argue that, the problem is designing an appropriate study to truly measure what it intends to measure.

Funding these types of studies with inconclusive data detracts from addressing modifiable factors associated with stillbirths. They needlessly create panic where there should be none. Increasing access to prenatal care, providing education regarding healthy versus unhealthy maternal behaviors, proper nutrition, etc. are the things that can make a difference, not fear mongering.