Childhood trauma gets under the skin

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Long-term changes in immune function caused by childhood trauma could explain increased vulnerability to a range of health problems in later life, according to new research by the Institute of Psychiatry, Psychology & Neuroscience (IoPPN) at King's College London and the NIHR Maudsley BRC.

The study, published today in *Molecular Psychiatry*, found heightened inflammation across three blood biomarkers in adults who had been victims of childhood trauma. High levels of inflammation can lead to serious and potentially life-threatening conditions such as type-2 diabetes, cardiovascular disease as well as the onset of psychiatric disorders.

Childhood trauma was defined by the researchers as experiencing sexual, physical or emotional abuse, neglect, or separation from caregivers before the age of 17. Previous research has shown that childhood trauma increases vulnerability to several psychiatric disorders, including depression, anxiety, psychosis and post-traumatic stress disorder (PTSD), as well as several chronic physical health problems, including arthritis, cardiovascular disease, lung disease and cancer. However, the biological pathway mediating vulnerability for these health problems has, until now, been unclear.

The researchers conducted a meta-analysis of 25 studies which previously investigated the association between childhood traumatic experiences and markers of inflammation in adulthood. The final sample comprised more than 16,000 people, including healthy participants and patients with psychiatric disorders or physical illnesses.

As well as the association between childhood trauma and increased blood inflammation, the researchers found that different types of trauma - emotional, physical or sexual abuse - affected these biomarkers in different ways. For instance, physical and sexual abuse was associated with significantly increased levels of two biomarkers - tumour necrosis factor-α (TNF-α) and interleukin-6 (IL-6), whereas heightened levels of c-reactive protein (CRP) appeared to be primarily related to parental absence during early child development.

Dr Valeria Mondelli from the Department of Psychological Medicine at

the IoPPN, said: 'Our findings are important not only because they help us to understand more about why people with a history of childhood trauma may develop psychiatric disorders or physical problems in adulthood, but also because they open the possibility of prevention and treatment strategies for these individuals. For instance, using these inflammatory markers might make it possible to identify victims of childhood trauma who are at higher risk of developing physical or mental health problems, and to test potential treatments which could decrease inflammation in these individuals.'

Dr Mondelli added: 'We also found that different types of trauma are associated with different types of inflammation. While there is no clear reason for this, there are several factors which may offer some insight, including the age and length of exposure to childhood trauma and the victim's relationship with the perpetrator. However, further research into this and the molecular mechanisms behind these associations is warranted.'

She concluded: 'Understanding the biological consequences of childhood trauma may be crucial for identifying why some individuals go on to develop physical or psychiatric disorders following these traumatic experiences, whereas other remain resilient in face of similar traumatic exposure.'

Provided by King's College London