

PCL/21/05 - Cardiovascular risk in early onset hypogonadism.

Over 1 in 300 children are born with atypical genitalia, which is commonly manifested as hypospadias, a condition where the opening for passing urine is not at the tip of the penis. Usually, these boys undergo surgery and are followed up for only a short period because of concerns about complications of surgery. Recent studies performed by myself have shown that boys born with hypospadias are at increased risk of high blood pressure and poor heart and blood vessel (vascular) health as they grow up. It is not clear, however, if this phenomenon is specific to hypospadias or if it would be found in other similar conditions too, or why this happens. To be able to improve clinical care and long-term health for such children, it is essential to: 1) investigate the cause of this vascular dysfunction; 2) identify those at greatest risk of this dysfunction; 3) understand how it develops over time; and 4) investigate whether it increases the risk of any complications following surgery. The proposed studies will help to answer these questions by comparing blood pressure data from boys with hypospadias from across the world and by undertaking studies on blood, urine and cell samples to look at the reasons why these boys might be at increased risk, and whether it is because of a mix of genetic and environmental factors. Blood vessels and skin samples from boys with hypospadias will be examined to see if wound healing is affected. Other boys who have had low testosterone throughout their childhood will also be invited for assessment of their blood vessel health, to see if boys with other conditions are also at risk of early cardiovascular disease. Overall, these studies will allow us to improve the care we currently offer to these people across their life-span.