

TCS/26/23 - Safety and biological effects of gonadotrophin releasing hormone agonists (GnRHa) in childhood: a translational study

Each year around 100-200 children in Scotland require treatment for significantly early (precocious) puberty. In these children, puberty is paused by treatment with medicines that temporarily lower sex hormones. These medicines are called gonadotrophin-releasing hormone agonists (GnRHa), also known as puberty blockers. GnRHa can also be used in people with gender identity problems. However, a recent national independent investigation into this use of GnRHa concluded that we didn't know enough about the long-term effects and health consequences of using these medicines in children. Sex hormones are important for heart, bone and brain development and health. Therefore, it is vital to understand whether GnRHa have any lasting ill-effects when given to children. This project will address these questions with three study work packages: 1) investigation of Scotland's national health and education records to find out how many children were treated with GnRHa and whether they are more likely to develop high blood pressure, heart disease, diabetes, psychological, mental health, learning or bone problems later in life; 2) a clinical study of children starting or currently receiving GnRHa for early puberty (assessing their health before and during treatment) and 3) state of the art comparative laboratory-based assessment of indicators of heart and brain health in tissue samples already collected from sheep, which were treated with GnRHa to block puberty. Together, these studies will advance understanding, improving information given to patients and their families by healthcare providers about the long-term effects of these medicines. They also provide a foundation for future multi-centre research.