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Resumo	Priapism, a prolonged penile erection in the absence of sexual arousal, is common among patients with sickle cell disease (SCD). Hypogonadism is also common in patients with SCD. While the administration of exogenous testosterone reverses hypogonadism, it is contraceptive. We hypothesized that the stimulation of endogenous testosterone production decreases priapism by normalizing molecular signaling involved in penile erection without decreasing intratesticular testosterone production, which would affect fertility. Treatment of SCD mice with FGIN-1-27, a ligand for translocator protein (TSPO) that mobilizes cholesterol to the inner mitochondrial membrane, resulted in eugonadal levels of serum testosterone without decreasing intratesticular testosterone production. Normalized testosterone levels, in turn, decreased priapism. At the molecular level, TSPO restored phosphodiesterase 5 activity and decreased NADPH oxidase-mediated oxidative stress in the penis, which are major molecular signaling molecules involved in penile erection and are dysregulated in SCD. These results indicate that pharmacologic activation of TSPO could be a novel, targetable pathway for treating hypogonadal men, particularly patients with SCD, without adverse effects on fertility.
Fomento	NIH