

THE TIGHT-SKIN MICE AS A GENETIC MODEL OF PEYRONIE'S-LIKE DISEASE

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Peyronie's disease (PD) is a disorder characterized by fibrotic plaques of the tunica albuginea of the penis with curvature or deformity during erection, penile pain, and erectile dysfunction [1]. PD is a poorly understood disease on molecular and physiopathological basis also due to the lack of appropriate animal models. There is only one animal model developed in 1997 [2] that shares some features with the human disease and that has been in the past years widely used to investigate on the molecular mechanism and/or mediators involved in PD. This model is realized by transforming growth factor- β (TGF β) injection into the penis tunica of rats [2]. However, TGF β represents one of the mediator involved in development of PD. Studies of Peyronie's patient have implicated an autoimmune component [3]. It has been proposed tight skin mouse (Tsk) as a experimental model for diseases coupled with abnormalities of the connective tissue [4]. The aim of our study was to characterize a new model of PD naturally occurring in the mouse strain Tsk. Tsk mice and their background C57Bl6J have been followed by 2 months up to 12 months. Histological analysis demonstrated the presence of an evident structural disorganization accompanied by thickening of the tunica and TGF β intense staining around the small vessels. Collagen deposition increases over time reaching its maximum at 12 months. TGF β message, as determined by quantitative RT-PCR, increases within the first 8 months and than starts declining. Conversely, iNOS message increases up to 12 months. In conclusion, Tsk mice can represent an useful model to study Peyronie's molecular mechanism as well as to test old and new therapies.

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