

Complement system

The complement system is a crucial part of innate [immunity](#). Recent work demonstrated an unexpected contribution to tissue [homeostasis](#) and [degeneration](#).

The complement component 1q (or simply [C1q](#)) is a [protein](#) complex involved in the [complement system](#).

A study investigated for the first time, in human [intervertebral disc](#) tissues, the deposition profile of the complement activation product [terminal complement complex](#) (TCC), an inflammatory trigger and inducer of cell lysis, and its inhibitor [CD59](#), and their correlation with the degree of [disc degeneration](#) (DD).

Methods: Disc biopsies were collected from patients diagnosed with DD (n = 39, age 63 ± 12) and adolescent idiopathic scoliosis (AIS, n = 10, age 17 ± 4) and compared with discs from healthy Young (n = 11, age 7 ± 7) and Elder (n = 10, age 65 ± 15) donors. Immunohistochemical detection of TCC and CD59 in nucleus pulposus (NP), annulus fibrosus (AF) and endplate (EP) was correlated with age, Pfirrmann grade and Modic changes.

Results: Higher percentage of TCC+ cells was detected in the NP and EP of DD compared to Elder (P < 0.05), and in the EP of Young versus Elder (P < 0.001). In DD, TCC deposition was positively correlated with Pfirrmann grade, but not with Modic changes, whereas for Young donors, a negative correlation was found with age, indicating TCC's involvement not only in DD, but also in early stages of skeletal development. Higher CD59 positivity was found in AIS and DD groups compared to Young (P < 0.05), and it was negatively correlated with the age of the patients.

Conclusion: TCC deposition positively correlated with the degree of disc degeneration. A functional relevance of TCC may exist in DD, representing a potential target for new therapeutics ¹⁾.

¹⁾

Teixeira GQ, Yong Z, Goncalves RM, et al. Terminal complement complex formation is associated with intervertebral disc degeneration [published online ahead of print, 2020 Sep 16]. Eur Spine J. 2020;10.1007/s00586-020-06592-4. doi:10.1007/s00586-020-06592-4

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=complement_system

Last update: **2025/04/29 20:29**

