原著

新規2系の関節炎モデルによる漢方薬の薬効評価

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要旨：① 4種のエピトープの単クローン性抗体とリポ多糖体（LPS）を投与すると多関節炎を発症する．この関節炎に対する越婢加朮湯（TJ-28），真武湯（TJ-30），疎経活血湯（TJ-53）について検討した．② In vitroヒト滑膜炎モデルにおいて大防風湯（TJ-97），牛車腎気丸（TJ-107），麻黄附子細辛湯（TJ-127）の薬効評価を検討した．

マウス血清中のリウマチ因子を測定し，右前肢を病理学的に評価した．他方，滑膜細胞のパンヌス様形成を経時的にスコア化し，培養上清中のIL-6を測定した．治療開始後12日目のマウスでは，対照に比較してRF-IgM産生はTJ-30>TJ-28≧TJ-53で抑制され，21日目のRF-IgG産生も同様な結果であった．病理学的にはTJ-30>TJ-53>TJ-28の順に有効性が認められた．滑膜細胞の増殖抑制は3剤ともにみられ，上清中のIL-6の産生はTJ-107，TJ-127で抑制されたが，TJ-97は抑制されなかった．

索引用語：漢方薬，関節炎用カクテルキット，ヒト滑膜細胞培養

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Evaluation of the efficacy of Kampo preparations on two novel experimental models for arthritis

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Abstract: Four arthritogenic epitopes present on the CB11 of chick type Ⅱ collagen molecule are recognized by $CD4^+$ T cells. Polyarthritis was induced by administering monoclonal antibodies (mAb) to the epitopes in combination with lipopolysaccharide (LPS). In the present study, we reevaluated the efficacy of Eppi-kajutsu-to (TJ-28), Sinbu-to (TJ-30), and Sokei-kakketsu-to (TJ-53) on the arthritis. Employing other models in vitro of human synovitis, the efficacy of Daibofu-to (TJ-97), Gosha-jinki-gan (TJ-107), and Mao-bushi-saishin-to (TJ-127) were evaluated.

Arthritis was induced in 7-week-old male mice with a dose of 2.0mg mAb injection intraperitoneal. Five days after the priming, LPS was given to the mice in the same manner at a dose of 50 μg . The dose of TJ-28, TJ-30, and TJ-53 were given at a dose of 1g/kg, and these Kampo preparations were administered to the mice orally from 6 to 21 days. Serum levels of rheumatoid factor (RF) were measured serially, and the right front paw was examined pathologically. Employing primary mixed culture of synovial cells from patients with rheumatoid arthritis, synovial tissue formation was examined serially in vitro.

Twelve days after the initial day of Kampo treatment, inhibition of RF-IgM level was greater in Kampo-treated mice (inhibition activity: TJ-30>TJ-28≧TJ-53) than in control mice. RF-IgG production was similarly inhibited by Kampo at 21 day. The efficacy of Kampo was confirmed histopathologcally in the following order: TJ-30>TJ-53>TJ-28. All three Kampo preparations inhibited the growth of synovial cells similarly. Although TJ-107 and TJ-127 inhibited IL-6 production in the supernatant, TJ-97 did not.

In the models for arthritis, Kampo preparations inhibited the development of arthritis and growth of synovial cells in vitro.

Key words: Kampo medicine, Arthritogenic monoclonal antibodies cocktail, Human synovial tissue culture

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