

serum IL-6 level of greater than 2.5 pg/ml, greater than 5 pg/ml, greater than 7.5 pg/ml, greater than 10 pg/ml, or greater than 12.5 pg/ml.

[0035] In various embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the free IL-6 levels in the patient's serum below pre-treatment levels. In particular embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the free IL-6 levels by at least 10% as compared to pre-treatment levels, by at least 20% as compared to pre-treatment levels, or by at least 50% as compared to pre-treatment levels.

[0036] In particular embodiments of any of the treatment methods, the patient has elevated pre-treatment levels of C-reactive protein (CRP). In certain embodiments, the patient has a pre-treatment CRP level greater than 2 mg/L, greater than 3 mg/L, greater than 5 mg/L, greater than 7.5 mg/L, or even greater than 10 mg/L.

[0037] In various embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's CRP levels below pre-treatment levels. In particular embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's CRP levels by at least 50% as compared to pre-treatment levels.

[0038] In particular embodiments of any of the treatment methods, the patient has been determined to have at least one copy of the TMPRSS6 rs855791 major allele using a TaqMan® real-time PCR assay.

[0039] In embodiments of any of the treatment methods, the IL-6 antagonist is an anti-IL-6 antibody, or antigen-binding fragment or derivative thereof.

[0040] In certain embodiments, the anti-IL-6 antibody or antigen-binding fragment or derivative has a K_D for binding human IL-6 of less than 100 nM, less than 50 nM, less than 10 nM, or less than 1 nM. In certain embodiments, the anti-IL-6 antibody or antigen-binding fragment or derivative has an elimination half-life following intravenous administration of at least 7 days, of at least 14 days, of at least 21 days, or at least 30 days.

[0041] In various antibody embodiments, the IL-6 antagonist is a full-length monoclonal anti-IL-6 antibody, such as an IgG1 or IgG4 antibody.

[0042] In select embodiments, the anti-IL-6 antibody or antigen-binding fragment or derivative is fully human. In some embodiments, the anti-IL-6 antibody or antigen-binding fragment or derivative is humanized.

[0043] In currently preferred embodiments, the anti-IL-6 antibody or antigen-binding fragment or derivative comprises all six variable region CDRs of MED5117. In some of

[0165] In certain embodiments, the patient has been treated with an IL-1 receptor antagonist. In specific embodiments, the IL-1 receptor antagonist is anakinra. In particular embodiments, the IL-1 receptor antagonist is discontinued when treatment with an IL-6 antagonist is initiated.

[0166] In certain embodiments, the patient has been treated with abatacept. In particular embodiments, abatacept is discontinued when treatment with an IL-6 antagonist is initiated.

[0167] In various embodiments, the IL-6 mediated disorder is selected from the group consisting of juvenile idiopathic arthritis, ankylosing spondylitis, plaque psoriasis, psoriatic arthritis, inflammatory bowel disease, Crohn's disease, and ulcerative colitis.

5.5 Pre-Treatment Serum IL-6 and CRP Levels

[0168] In typical embodiments of the methods described herein, the patient has elevated pre-treatment serum levels of IL-6.

[0169] In some embodiments, the patient has a pre-treatment serum IL-6 level of greater than 2.5 pg/ml. In various embodiments, the patient has a pre-treatment serum IL-6 level of greater than 5 pg/ml, greater than 7.5 pg/ml, greater than 10 pg/ml, greater than 12.5 pg/ml, or greater than 15 pg/ml.

[0170] In some embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's serum IL-6 levels below pre-treatment levels. In certain embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's serum IL-6 levels by at least 10%, 20%, 30%, 40%, or 50% as compared to pre-treatment levels.

[0171] In various embodiments, the patient has elevated pre-treatment levels of C-reactive protein (CRP). In some embodiments, the patient has a pre-treatment CRP level greater than 2 mg/L, 2.5 mg/L, 3 mg/L, 3.5 mg/L, 4 mg/L, 4.5 mg/L, or 5 mg/L. In some embodiments, the patient has pre-treatment CRP levels greater than 7.5 mg/L, 10 mg/L, 12.5 mg/L, or 15 mg/L.

[0172] In some embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's CRP levels below pre-treatment levels. In certain embodiments, the IL-6 antagonist is administered at a dose, on a schedule, and for a period sufficient to reduce the patient's CRP levels by at least 10%, 20%, 30%, 40%, or 50% as compared to pre-treatment levels.

5.6 *TMPRSS6* rs855791 Genotyping

[0173] Methods described herein comprise administering a therapeutically effective amount of an IL-6 antagonist to a subject who has been determined to have at least one copy of the