

## SUPPLEMENTARY MATERIALS

### Study design

Coverage in the NHS in Catalonia is universal. According to *Idescat* (the Statistical Institute of Catalonia), in 2017, there were 6,155,980 adult residents in Catalonia. Numbers provided by *AQuAS* indicated that 99.1% of them were covered in the NHS. Therefore, the database virtually encompasses the entire population of Catalonia that uses public health resources. Medical records include a patient identifier, registry date in the primary, hospital or A&E care, medical diagnosis, medical procedures, and registries of drug consumption regarding the type of drug and Define Daily Dosage (DDD). The DDD is a measure developed by the World Health Organization that indicates the assumed average maintenance dose per day for a drug used for its main indication in adults (World Health Organization, 2020). It does not necessarily reflect the prescribed daily dose, which may vary according to the patient's characteristics, but it allows international drug consumption comparisons.

Treatment codes available in the database were (ATC codes are given in parentheses):

1. Topical corticosteroids:
  - a. Low potency: fluocinonide acetone 0,0025% / 0,00625-0,01% (D07AC08); hydrocortisone aceponate (D07AC16); methylprednisolone aceponate 0,25% (D07AC14).
  - b. Medium potency: prednicarbate 0,25% (D07AC18); betamethasone valerate 0,025% (D07AC01); lobetason butyrate 0,05% (D07AB01); desoximetasone 0,05% (D07AC03); fluocinonide acetone 0,00625-0,01% (D07AC08); flucortin butile 0,75% (D07AB04); hydrocortisone aceponate 0,1% (D07AC16); hydrocortisone butyrate 0,1% (D07AA02).
  - c. High potency: betamethasone dipropionate 0,05% (D07AC01); beclomethasone dipropionate 0,025% (D07AC15); betamethasone valerate 0,1% (D07AC01); diflorasone diacetate 0,05% (D07AC10); hydrocortisone butyrate 0,1% (D07AA02); methylprednisolone aceponate 0,1% (D07AC14); mometasone furoate 0,1% (D07AC13); fluticasone propionate 0,1% (D07AC17); fluocinonide (D07AC08; D07CC05) (with antibiotics).
  - d. Ultra-high potency: clobetasol propionate 0,05% (D07AD01); hydrocortisone 17 butyrate (D07AB02); methylprednisolone aceponate (D07AC14); mometasone furoate (D07AC13); fluticasone propionate (D07AC17).
2. Antihistamines: dexchlorpheniramine (R06AB02), cetirizine (R06AE07), levocetirizine (R06AE09), loratadine (R06AX13), desloratadine (R06AX27), rupatadine (R06AX28), ebastine (R06AX22), fexofenadine (R06AX26), bilastine (R06AX29).

3. Immunosuppressant agents: Tacrolimus (D11AH01; L04AD02), pimecrolimus (D11AH02), ciclosporin (L04AD01), azathioprine (L04AX01), cyclophosphamide (L01AA01), methotrexate (L04AX03; L01BA01), alitretinoin (D11AH04), mycophenolic acid (L04AA06), interferon alpha-2a (L03AB04), interferon alpha-2b (L03AB05).
4. Corticosteroids for systemic use: Prednisone (H02AB07), methylprednisolone (H02AB04), hydrocortisone (H02AB09), triamcinolone (H02AB08), dexamethasone (H02AB02), deflazacort (H02AB13), prednisolone (H02AB06).

### **Multi-morbidities**

The following multi-morbidities were studied (main ICD-9-CM): acute bronchitis (466.X), allergic rhinitis (AR) (477.X), asthma (493.0X, 493.1X, 493.2X, 493.8X, 493.9X), food allergy (693.1), not a specified allergy (995.3) CRS with nasal polyps (CRSwNP) (471, 471.0, 471.9), chronic obstructive pulmonary disease (COPD) (491.21, 491.0). Also, hypertension, overweight, dyslipidaemia, diabetes, ischemic heart disease, depression, anxiety, diseases due to alcohol consumption, conditions derived from tobacco, organ failure (heart, liver, renal), rheumatoid arthritis, and inflammatory bowel disease were analysed.