

**Table S2.1. Demographic, clinical, histological and serological features of CD patients.**

|   | CD (n=159)      |
|---|-----------------|
| Sex   |                 |
| Female  | 129 (81.1%)     |
| Male  | 30 (18.9%)      |
| Age at diagnosis (years) (mean $\pm$ SD)          | 35.4 $\pm$ 14.7 |
| Diagnostic delay (months)<br>(median $\pm$ range) | 36.0 (1-732)    |
| BMI (mean $\pm$ SD)                               | 22.9 $\pm$ 4.1  |
| IBS-like symptoms                                 |                 |
| None  | 32 (20.1%)      |
| Diarrhea  | 83 (52.2%)      |
| Constipation                                      | 24 (15.1%)      |
| Alternating bowel movements                       | 20 (12.6%)      |
| Dyspepsia   | 67 (42.1%)      |
| Extra-intestinal symptoms                         | 108 (67.9%)     |
| Weight loss                                       | 55 (34.6%)      |
| Poly/hypermennorrhea                              | 39 (24.5%)      |
| Associated autoimmune diseases                    | 55 (34.6%)      |
| MFH   | 12 (7.5%)       |
| Nickel hypersensitivity                           | 15 (9.4%)       |
| SRMI  | 48 (30.2%)      |
| Atopy   | 26 (16.4%)      |
| Marsh duodenal histology                          |                 |
| 2   | 7 (4.4%)        |
| 3   | 152 (95.6%)     |

BMI=Body Mass Index; CD=Celiac Disease; IBS=Irritable Bowel Syndrome; MFH=Multiple Food Hypersensitivity; SD=Standard Deviation; SRMI=Self-Reported Milk Intolerance.

**Table S2.2. Frequency of extra-intestinal symptoms referred in the whole CD population.**

|  | CD (n=159) (%) |
|--|----------------|
| Skin disorders (1 or more)             | 24 (15.0)      |
| Erythema and/or eczema                 | 8 (5.0)        |
| Itching                                | 7 (4.4)        |
| Urticaria-angioedema                   | 7 (4.4)        |
| Alopecia                               | 4 (2.5)        |
| Nail fragility                         | 2 (1.3)        |
| Oral mucosa disorders (1 or more)      | 19 (11.9)      |
| Recurrent aphthous stomatitis          | 17 (10.7)      |
| Angular cheilitis                      | 2 (1.3)        |
| Skeletal system (1 or more)            | 26 (16.3)      |
| Arthralgia                             | 19 (11.9)      |
| Myalgia                                | 13 (8.1)       |
| Neuropsychiatric symptoms (1 or more)  | 56 (35.2)      |
| Headache/migraine                      | 30 (18.9)      |
| Asthenia                               | 27 (17.0)      |
| Sensory disorders                      | 7 (4.4)        |
| (Numbness, paresthesia, dysesthesia)   |                |
| Anxiety/ depression                    | 6 (3.8)        |
| Confusion/mental fog                   | 6 (3.8)        |
| Insomnia, diurnal drowsiness           | 4 (2.5)        |
| Visual disorders                       | 3 (1.9)        |
| Attention or concentration deficit     | 2 (1.3)        |
| Lipothymia/ syncope                    | 2 (1.3)        |
| Vertigo or other balance disorders     | 1 (0.6)        |
| Cardiac symptoms (1 or more)           |                |
| Palpitations/tachycardia/ectopic beats | 6 (3.8)        |
| Genitourinary disorders (1 or more)    |                |
| Cystitis, dysmenorrhea, dyspareunia    | 13 (8.2)       |

CD=Celiac Disease

**Table S2.3. Frequency of autoimmune diseases referred in the whole CD population.**

|                                 | CD (n=159) (%) |
|---------------------------------|----------------|
| Hashimoto's thyroiditis         | 27 (17.0)      |
| Psoriasis ± psoriatic arthritis | 5 (3.1)        |
| Raynaud's phenomenon            | 5 (3.1)        |
| Fibromyalgia                    | 4 (2.5)        |
| Diabetes mellitus (Type 1)      | 4 (2.5)        |
| Vitiligo                        | 3 (1.9)        |
| Autoimmune hepatitis            | 2 (1.3)        |
| Autoimmune atrophic gastritis   | 2 (1.3)        |
| Graves' disease                 | 2 (1.3)        |
| Multiple sclerosis              | 2 (1.3)        |
| Sjogren's syndrome              | 2 (1.3)        |
| Undifferentiated connectivitis  | 2 (1.3)        |
| Ankylosing spondylitis          | 1 (0.6)        |
| Pemphigus foliaceus             | 1 (0.6)        |
| Rheumatoid arthritis            | 1 (0.6)        |
| Seronegative spondyloarthritis  | 1 (0.6)        |

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**Table S2.4. Blood count in 159 CD patients.**

|                                   | CD (n=159)     |
|-----------------------------------|----------------|
| HGB (gr/dl) (mean $\pm$ SD)       | 11.9 $\pm$ 2.1 |
| Hematocrit                        |                |
| Below normal value (number and %) | 54 (34.0)      |
| Hematocrit (%) (mean $\pm$ SD)    | 37.9 $\pm$ 4.5 |
| MCV                               |                |
| Below normal value (number and %) | 85 (53.5)      |
| MCV (fL) (mean $\pm$ SD)          | 81.2 $\pm$ 9.1 |
| MCH                               |                |
| Below normal value (number and %) | 77 (48.4)      |
| MCH (pg) (mean $\pm$ SD)          | 26.9 $\pm$ 2.9 |
| MCHC                              |                |
| Below normal value (number and %) | 29 (18.2)      |
| MCHC (gr/dl) (mean $\pm$ SD)      | 32.8 $\pm$ 1.7 |
| RDW                               |                |
| Above normal value (number and %) | 24 (15.1)      |
| RDW (%) (mean $\pm$ SD)           | 14.5 $\pm$ 2.5 |

CD=Celiac Disease; HGB=Hemoglobin; MCH=Mean Corpuscular HGB; MCHC=Mean Corpuscular HGB Concentration; MCV=Mean Corpuscular Volume; RDW=Red Cell Distribution Width; SD=Standard Deviation.

References values: Hemoglobin (HGB) Male 13-18 g/dL, Female 12-16 g/dL; Mean Corpuscular HGB (MCH) 26-32 pg; Mean Corpuscular HGB Concentration (MCHC) 32-36 g/dL; Mean Corpuscular Volume (MCV) 80-99 fL; Red Cell Distribution Width (RDW) 11-15%.

**Table S2.5. Iron metabolism, ESR, CRP, vitamin B<sub>12</sub>, folic acid and TSH in 159 CD patients.**

|  | CD (n=159)      |
|--|-----------------|
| Total serum iron                                 |                 |
| Below normal value (number and %)                | 79 (49.7)       |
| Total serum iron (µg/dL) [median (range)]        | 47.5 (18-157)   |
| Serum ferritin                                   |                 |
| Below normal value (number and %)                | 101 (63.5)      |
| Above normal value (number and %)                | 6 (3.8)         |
| Serum ferritin (ng/ml) [median (range)]          | 13.2 (2-284)    |
| ESR  |                 |
| Above normal value (number and %)                | 68 (42.8)       |
| ESR (mm/h) [median (range)]                      | 22 (2-75)       |
| CRP  |                 |
| Above normal value (number and %)                | 17 (10.7)       |
| CRP (mg/dl) [median (range)]                     | 0.62 (0.06-32)  |
| Vitamin B <sub>12</sub>                          |                 |
| Below normal value (number and %)                | 49 (30.8)       |
| Vitamin B <sub>12</sub> (pg/mL) [median (range)] | 605 (113-903)   |
| Folic acid                                       |                 |
| Below normal value (number and %)                | 76 (47.8)       |
| Folic acid (ng/mL) [median (range)]              | 2.34 (0.6-11.5) |
| TSH  |                 |
| Above normal value (number and %)                | 37 (23.3)       |
| TSH (microIU/l) (mean ± SD)                      | 1.9 ± 0.8       |

CD=Celiac Disease; CRP=C-Reactive Protein; ESR=Erythrocyte Sedimentation Rate; SD=Standard Deviation; TSH=Thyroid-Stimulating Hormone.

Reference values: C-reactive protein (CRP) <5 mg/l; Erythrocyte Sedimentation Rate (ESR) 2-20 mm/h; Ferritin 15-150 ng/mL; Folic acid 3.89-26.8 mcg/L; Thyroid-Stimulating Hormone (TSH) 0.35-4.94 µU/mL; Total Serum Iron Male 65-180 µg/dL, Female 30-170 µg/dL; Vitamin B<sub>12</sub> 197-890 ng/L.