**Supplementary Material**

**Basic Symptoms and Gray Matter Volumes of Patients at Clinical High Risk for Psychosis**

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**Table S1 CHR criteria according to the BSs concept**

**A) Cognitive Disturbances (COGDIS)**

≥2 of the following 9 BSs with at least weekly occurrence (i.e., SPI-A/SPI-CY score of ≥3) within the last 3 months:

* Inability to divide attention (B1a) between a (semi-) automatic and another task that strain different senses, e.g., making a sandwich (visual) while conversing (auditory)
* Thought interference (C2) of completely irrelevant, random thought contents
* Thought blockages (C3) incl. trailing off mentally and leading to a (temporary) loss of intended thought
* Disturbance of receptive speech (C4), i.e., a disturbance in the immediate understanding of verbal stimuli in one’s mother tongue
* Disturbance of expressive speech (C5), i.e., in the presence of a clear idea, a disturbance in the immediate access to the adequate word in one’s mother tongue
* Thought pressure (D3), i.e., rapid succession of irrelevant, unrelated thoughts
* Unstable ideas of reference (D4), experienced with immediate insight
* Disturbances of abstract thinking (O3), i.e., initial literal understanding of metaphoric contents or symbols
* Captivation of attention by details of the visual field (O7) that are random and irrelevant

**B) Cognitive-Perceptive Basic Symptoms (COPER)**

≥1 of the following 10 BSs with at least weekly occurrence (i.e., SPI-A/SPI-CY score of ≥3) within the last 3 months and 1st occurrence ≥12 months ago (irrespective of frequency and persistence during this time):

* Thought interference (C2)
* Thought blockages (C3)
* Disturbance of receptive speech (C4)
* Thought pressure (D3)
* Unstable ideas of reference (D4)
* Thought perseveration (O1), i.e., repeated intrusion of irrelevant thought contents
* Decreased ability to discriminate between ideas / perception, fantasy / true memories (O2), i.e., unfounded consideration of perceptions or memories as products of current imagination
* Derealisation (O8), incl. reduction to 2-dimensional vision and increased emotional involvement into the surrounding
* Visual perception disturbances, excl. blurred vision and hypersensitivity to light (D5, F2, F3, O4), i.e., perceptive distortions that are immediately recognized as own misperceptions
* Acoustic perception disturbances, excl. hypersensitivity to sounds (F5, O5), as above

a Item numbers refer to the ‘Schizophrenia Proneness Instrument, Adult Version (SPI-A)’ that gives more extended descriptions of BS and instructions for their assessment.(Schultze-Lutter *et al.* 2007) **Table S2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Diagnosis** | **CC** |  | **CHR** |  | **FEP** |  |
|  | **n** | **%** | **n** | **%** | **n** | **%** |
| **MD actual** | 3 | 11 | 8 | 17 | 2 | 14 |
| **MD recurrent** | 3 | 11 | 11 | 23 | 1 | 7 |
| **Suicidality** | 3 | 11 | 4 | 8 | 3 | 21 |
| **BP** | 0 | 0 | 1 | 2 | 0 | 0 |
| **Panic Dis** | 2 | 7 | 1 | 2 | 0 | 0 |
| **Agoraphobia** | 0 | 0 | 2 | 4 | 1 | 7 |
| **Social phobia** | 0 | 0 | 7 | 15 | 1 | 7 |
| **OCD** | 0 | 0 | 1 | 2 | 0 | 0 |
| **PTSD** | 1 | 4 | 0 | 0 | 0 | 0 |
| **Alc abuse** | 3 | 11 | 3 | 6 | 0 | 0 |
| **Sub abuse** | 2 | 7 | 2 | 4 | 0 | 0 |
| **Anorexia** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bulimia** | 0 | 0 | 0 | 0 | 0 | 0 |
| **General Anx Dis** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Dysthymia** | 3 | 11 | 2 | 4 | 0 | 0 |
| **Specific phobia** | 0 | 0 | 1 | 2 | 0 | 0 |
| **Tic Disorder** | 0 | 0 | 1 | 2 | 0 | 0 |
| **ADHD comba** | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADHD inatta** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Cond disa** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Adjust disa** | 1 | 4 | 1 | 2 | 0 | 0 |
| **ASSa** | 1 | 4 | 2 | 4 | 0 | 0 |

MD actual = Major Depression, actual; MD recurrent = Major Depression recurrent; BP = Bipolar Disorder; Panic Dis = Panic Disorder; OCD = Obsessive Compulsive Disorder; PTSD = Posttraumatic Stress Disorder; Alc abuse = Alcohol Abuse; Sub abuse = Substance Abuse; Gen Anx Dis = Generalized Anxiety Disorder; ADHD comb = Attention Deficit Hyperactivity Disorder, combined type; inatt = inattentive type; Con dis = Conduct Disorder, Adjust dis = Adjustment Disorder; ASS = Autism Spectrum Disorder

**a** only assessed in patients ≤ 18 years.

**Table S3**

**Volumes of brain regions separated for different diagnostic groups**

|  |  |  |  |
| --- | --- | --- | --- |
| **Region** | **Group** | **Mean** | **SE** |
| **entorhinal** | FEP | 4084.8 | 187.3 |
|  | BS&UHR | 4375.5 | 165.5 |
|  | UHR | 4703.8 | 175.1 |
|  | BS | 4011.9 | 187.0 |
|  | CC | 4009.7 | 132.4 |
| **inferior temporal** | FEP | 23390.5 | 632.2 |
|  | BS&UHR | 23586.9 | 558.7 |
|  | UHR | 24634.3 | 591.0 |
|  | BS | 25513.0 | 631.3 |
|  | CC | 25526.0 | 446.9 |
| **inferior parietal** | FEP | 28162.2 | 817.4 |
|  | BS&UHR | 27709.2 | 722.4 |
|  | UHR | 29577.4 | 764.2 |
|  | BS | 29045.7 | 816.3 |
|  | CC | 31202.4 | 577.9 |
| **lateral occipital** | FEP | 26305.5 | 862.9 |
|  | BS&UHR | 26824.0 | 762.6 |
|  | UHR | 27220.4 | 806.6 |
|  | BS | 28223.6 | 861.7 |
|  | CC | 29669.6 | 610.0 |
| **medial orbitofrontal** | FEP | 10209.6 | 301.5 |
|  | BS&UHR | 10144.8 | 266.4 |
|  | UHR | 10654.6 | 281.8 |
|  | BS | 10775.7 | 301.1 |
|  | CC | 11308.4 | 213.1 |
| **middle temporal** | FEP | 25909.6 | 762.7 |
|  | BS&UHR | 23852.6 | 674.1 |
|  | UHR | 25412.1 | 713.0 |
|  | BS | 26488.8 | 761.7 |
|  | CC | 26866.4 | 539.2 |
| **precuneus** | FEP | 20104.0 | 616.3 |
|  | BS&UHR | 19865.5 | 544.7 |
|  | UHR | 20240.8 | 576.2 |
|  | BS | 21035.8 | 615.5 |
|  | CC | 22108.0 | 435.7 |

Gray matter cortical volume in µl, mean and SE = standard error. CC = clinical controls, FEP = first episode psychosis, BS = basic symptoms, UHR = ultra high risk.

**References**

**Schultze-Lutter F, Addington J, Ruhrmann S, Klosterkotter J** (2007) *Schizophrenia Proneness Instrument, Adult version (SPI-A).* Rom.