Physical Signs and Symptoms of Schizophrenia - A New Dimension

Mohamed Ramadan MD MS
Medical Director MMHC
Mental and Physical Health Problems are Interwoven.

- Many people suffer from both physical and mental health problems. Integrated primary care services help ensure that people are treated in a holistic manner, meeting the mental health needs of people with physical disorders, as well as the physical health needs of people with mental disorders.
- Integrating mental health services into primary care is the most viable way of ensuring that people have access to the care they need.
In 2004 a consensus meeting including psychiatric and other medical experts recommended that mental health care providers perform physical health monitoring for their patients that typically occurred in primary care settings.

This additional monitoring will lead to earlier detection of common and serious risk factors.
• Schizophrenia is a heterogeneous disorder with diversity in symptoms, course, prognosis and probably etiology.

• Schizophrenic patients die younger and different physical disorders occur with increased frequency.

• A meta-analysis study done of published data related to the excess mortality concluded that 60% of the excess mortality is attributable to physical illnesses.
General Exam

While doing the general physical exam look for minor physical anomalies as it may provide important clues for the diagnosis and to understanding schizophrenia spectrum disorders from a neurodevelopmental perspective. This may be particularly important to support a first time diagnosis of schizophrenia.
Head
1- Fine electric hair  2-Two or more whorls
3- Head circumference outside of normal range

Eye
1- Epicanthus    2- Hypertelorism (wide-set eyes)
3- ↑ Inner canthal distance and ↑ Outer canthal distance
4- ↑ Inter pupillary distance

Ears
1- Ear position( low-seated ears)
2- Adherent ear lobes
3- Malformed ears
4- Asymmetrical ears
5- Soft and pliable ears

Mouth
1- High steeped palate
2- Furrowed tongue or tongue with smooth – rough spots

Hands
1- Curved fifth finger
2- Single transverse palmer crease

Foot
Third toe longer than second toe
Partial syndactyilia (webbing) of two middle toes
Gab between first and second toes
Several of the features that differentiate patients relate to the development of the neuro-basicranial complex and the adjacent temporal and frontal lobes which may provide clues to the nature and timing of altered brain development.

There is an association between minor physical anomalies and lateral ventricular enlargement in childhood and adolescent onset schizophrenia.
Patients with schizophrenia have higher rates of cardiovascular disease and mortality.

- 20% of deaths in schizophrenic patients
- Odds ratio for arrhythmia is 1.5, heart failure is 1.7 and for the overall cardiovascular mortality is 2.2.
Cardiovascular

- Reduced cardiac responding and post stimulus acceleration has been reported for schizophrenic patients
- Low cardio-vagal (parasympathetic) heart rate variability (HRV)—a risk factor for myocardial infarction.
- The reduced HRV in schizophrenia patients at baseline may render them at greater cardiovascular risk when treated with medications having strong cardiovascular effects.
Cardiovascular

- Velocardo facial syndrome has cardiac anomalies, abnormal facies, thymic disorders, cleft palate, and hypocalcemia results from a microdeletion on 22 (22q11.2).
- 30% will develop schizophrenia.
- Abnormal temporal lobe and hippocampal development is concordant with MRI findings in the schizophrenia literature.
Respiratory

- Schizophrenic patients seldom have inhalant allergies and seldom sneeze even during hay fever season. They have low blood levels of histamine, which rose to normal on treatment with an antipsychotic drug.
- Males have low lung cancer risk, females have an elevated risk for cancer breast.
Tardive orofacial dyskinesia were evaluated for abnormal respiratory movements. Such abnormality was present in 45% of patients. This may lead to increased mortality and greater vulnerability to respiratory tract infections.
Gastrointestinal

- Patients with schizophrenia had significantly higher waist to hip ratio and over three times as much visceral fat.
- Increased prevalence of dyslipidemia.
- The risk of digestive track cancer in schizophrenic patients has been found to be elevated in both sexes.
Gastrointestinal

- Kroll suggested that a non-hepatocellular liver dysfunction, caused by the presence of a congenital or acquired portal-systemic shunt, constitutes a major predisposing factor in the pathogenesis of schizophrenia.
- Also high antibody titres against an E. coli O-antigen in sera from somatically healthy male schizophrenic patients.
Urinary System

- CSF mean level of norepinephrine and metabolites of biogenic amines was two-fold higher in polyuric patients.

- CSF levels of histamine's primary metabolite, tele-methylhistamine, were positively correlated with daily urine volume. Norepinephrine and Histamine may be involved in psychogenic polydipsia-polyuria.
Urinary System

- 77% had abnormal diurnal weight gain values and 62% were polyuric. Chronic schizophrenics had almost twice (2,602ml) the daily urine volume.
- 55% of chronic schizophrenics contrasted with 19% of the control group, excreted more than 2 liters.
- Rhabdomyolysis and renal failure as a result of intense activity during a psychotic episode.
Urinary System

- Detrusor hyperreflexia does occur in schizophrenic patients, this was related to a possible upper motor neuron neurogenic bladder dysfunction.
- Many schizophrenic patients have brain abnormalities similar to those associated with urge incontinence and detrusor hyperreflexia in neurological patients.
Endocrine

A spectrum of thyroid function test abnormalities in chronic schizophrenia; this may be related to an abnormality in the central regulation of the hypothalamo-pituitary thyroid axis as well as at the peripheral level
Endocrine

In a study of the growth hormone response to growth hormone-releasing hormone in schizophrenic patients. A suprapituitary dysfunction in schizophrenia was found. The results are consistent with the hypothesis that pathology at a level above the pituitary affects GH responses to dopamine agonists in schizophrenia.
Endocrine

Individuals with schizophrenia are more prone to developing type II DM. Many studies have reported that, in addition to type II DM, impaired glucose tolerance and also insulin resistance are more common among patients with schizophrenia than the general population.
Endocrine

- lack of normal inhibition of cortisol during early sleep that has been reported in schizophrenic patients.
- Higher daytime serum cortisol level has been found and these levels correlate positively with the clinical symptoms of psychosis, paranoid delusions, grandiose delusions and hallucinations.
In a pilot study negative correlation between negative symptoms of schizophrenia and testosterone levels was found. Serum testosterone (T), dehydroepiandrosterone sulfate (DHEAS), levels were lower.
Endocrine

In schizophrenic men circadian and sleep-related endocrine rhythms are different than their control group. For example, prolactin secretion is hyperresponsive to the physiologic stimulus of sleep onset.
Neurological

- less skin conductivity and heart rate reactivity to tones and stimuli.

- Chronic schizophrenics autonomic activity is determined relatively more by endogenous factors than by external stimuli.
Neurological

One of the best known of the traits associated with schizophrenia is a disorder of smooth pursuit eye tracking (ETD), which is present in 50-80% of schizophrenia patients. ETD is more than three times more prevalent in the families of a schizophrenia patient than is schizophrenia itself.
Neurological

- Neuromuscular abnormalities as muscle biopsies and/or macro EMG and/or aberrant psychomotor performance like finger tapping test were found in (93%) patients, (56%) first-degree relatives and in three (21%) controls.

- Smell identification deficits are consistently found in schizophrenia, smell identification deficit was also unrelated to clinical characteristics of the patients.
Immune Disturbances

- The abnormalities include decreased T-cell interleukin-2 production, reduced number and responsiveness of peripheral lymphocytes, and abnormal cellular and humoral reactivity to neurons.

- These immunologic abnormalities may cause serious infections.
CONCLUSIONS

• Medical morbidity and mortality rates remain elevated in schizophrenia patients compared with the general population.

• Integrated care can address this problem by adopting established strategies for prevention and intervention.

Integration is a process, not an event.