Tics, OCD and Autism

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Outline

- What are Tics and Tourette Syndrome (TS)
- How common are Tics and TS in individuals with ASD
- Specific challenges and factors to consider when managing Tics in ASD
- What is Obsessive Compulsive Disorder (OCD)
- OCD and ASD are different but there are some overlaps
- How common is OCD in individuals with ASD
- Specific OCD treatment challenges with co-occurring ASD
Definitions: Tics/Tourette

- **Tics**: described as a stereotyped, repeated (but not rhythmic) usually rapid and brief movements or vocalization (Freeman)

- **Tics**: Sudden, rapid, repetitive, non-rhythmic, inappositive, irresistible, muscle movements of vocalizations, which can be classified as simple or complex (Cath et al 2011, Singer 2011)

- **Tics**: are suppressible, suggestible, waxing and waning and have a premonitory urge.
Tourette Syndrome (TS)*

• multiple (2 or more) motor tics
and
• one or more vocal tics
• both present at the same time (but not necessarily simultaneously) for at least 1 year
• a waxing and waning course
• onset before 18
and
• not attributable to effects of a substance or other medical conditions

* (DSM-5, American Psychiatric Association 2000)
Course and prognosis of Tics

• Tics are benign neurological movements.
• Tics wax-and-wane over time and move around to different parts of the body. New tics emerge and some old ones disappear but this does not indicate that the condition is getting worse, rather is the natural course of the condition.
• Tics are usually at their peak between ages 10 and 13. After 13 they tend to reduce in a fluctuating manner.
• In about 55-60% of young people tics disappear by late teens - early adulthood. In another 20-25% tics become minor or minimal. In around 20% the tics continue into adulthood with the same severity.
• For most young people the mainstay of managing tics is to ignore them entirely.
Tics and ASD

• Previously tics in ASD were considered coincidental or caused by neuroleptic medication (Barabas et al, Mueller et al, Realmuto et al, Stahl et al).

• However, an increasing number of clinical reports (Comings et al, Ringman et al, Sverd et al) and systematic studies (Baron-Cohen et al, Burd et al, Canitano et al, Sverd et al) established that tics (and TS) in ASD were common.

• A significant proportion of TS patients have ASD (currently 4.5%–12.9%, but estimates in studies vary from 3-20%) — (Freeman et al 2000, Burd 2009 et al, Pringsheim 2013 et al)
Tics and ASD

• In ASD - tic phenomenology, tic awareness, and associated sensory phenomena is not well studied.

• The tic severity in ASD is reported to be usually mild (Canitano 2007, Baron-Cohen 1999, Pringsheim 2013) but our experience at Evelina differs.

• The presence of ASD in TS, is associated with higher comorbidity rates for ADHD, rage attacks, and OCD (Pringsheim 2013).

• There are implicated common genetic factors behind both ASD and TS (Clarke et al, Lawson-Yuen et al, Fernandez et al, State et al) and similarities in neuroimaging findings (Church 2005, Courchesne 2005, Hughes 2007)
Tics and Tourette syndrome in autism spectrum disorders.

- Among 104 individuals with ASD, 22 percent presented tic disorders:
  - 11 percent with Tourette disorder (TD), and 11 percent with chronic motor tics.
  - An association between the level of intellectual impairment and tic severity was found.
Psychopathology in a Swedish population of school children with tic disorders. (Khalifa et al 2006)

• Another epidemiological study conducted in Sweden on a population of 4479 children measured a 0.6% frequency of TS.

• **In the TS group:**

1. The rate of comorbid ADHD 68% (60% combined subtype, 8% hyperactive-impulsive subtype)
2. The rate of ASD was 20% (16% Asperger, 4% PDD-NOS)
3. The rate of dyslexia was 16%
4. The rate of developmental coordination disorder was 20%
# Studies of TS in ASD samples, and ASD in TS samples

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Type of study</th>
<th>N</th>
<th>Age</th>
<th>Comorbidity rate</th>
<th>Scales</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS in ASD samples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canitano and Vivanti (2007) [44]</td>
<td>Clinical cohort of ASD</td>
<td>105</td>
<td>Mean, 12</td>
<td>11% TS</td>
<td>DSM IV criteria</td>
<td>Italy</td>
</tr>
<tr>
<td>Kano et al. (1987) [42]</td>
<td>Clinical cohort of ASD</td>
<td>76</td>
<td>NS</td>
<td>2.6% TS</td>
<td>NS</td>
<td>Japan</td>
</tr>
<tr>
<td>ASD in TS samples</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burd et al. (2009) [45]</td>
<td>Clinical cohort of TS</td>
<td>7288</td>
<td>NS</td>
<td>4.6% ASD</td>
<td>DSM IV criteria</td>
<td>Tic international database (author from US)</td>
</tr>
<tr>
<td>Ghanizadeh et al. (2009) [65]</td>
<td>Clinical cohort of TS</td>
<td>35</td>
<td>Mean, 11.8</td>
<td>2.9% ASD, 68.6% ADHD</td>
<td>CBCL, K-SADS, YGTSS</td>
<td>Iran</td>
</tr>
<tr>
<td>Huisman-van Dijk et al. (2016)</td>
<td>Clinical cohort of TS</td>
<td>225</td>
<td>6–72</td>
<td>26% ADHD, 20% ASD, 35.9% OCD</td>
<td>Conners AQ, SCID-I, Y-BOCS, YGTSS</td>
<td>Germany</td>
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Challenges that tics present for young people with Autism:

- Increase in social anxiety when tic-ing in public
- Misunderstanding of the tics and coprolalia – effects of social awareness on modulation of eco and coprophenomena
- High levels of baseline anxiety and emotional dysregulation can result in intense bouts of tics
- Increased sensitivity to tic-urge perception: the role of sensory sensitivities and higher level of interoception in tic frequency and severity
- Tic attacks and attacks of Tic-like movements in young people with Autism Spectrum Disorder
Tic-attacks: are they a form of functional neurological disorder?

• Collicott and colleagues used the term tic-attacks to describe ‘distinct bouts of severe, continuous, non-suppressible and disabling tics lasting from 15 minutes to several hours’.

• In child and adolescent samples the movements seen in tic attacks include both tics as well as whole body writhing that is inconsistent with tics.

• Tic-attacks are a mixture of severe bout of typical tics combined with functional anxiety driven movements mostly full body writing movements – so these may be better described as attack of tic-like movements and present a common form functional movement in tics.

• Represent a panic attack in an individual with tics and co-morbid anxiety.
Trigger stimulus
Premonitory urge: tingling in spine

Perceived Threat
“I might have a tic”
“What will others think?”

Anxiety/Apprehension
Will it happen?

Body sensations
Elevated heart rate, sweating, legs weaken

Internal Monitoring
Body Scanning

Safety behaviours
Move to safe position, hold wall, avoidance

Interpretation of sensation as catastrophic
Tic-attack management

• Difficult for parents to observe and parental focus on the tic-like attacks can maintain and reinforce these.

• Often triggered in the mornings, before going to school, or at night, or in social situations

• Children may get taken to the emergency department and are given benzodiazepines.

• Responds to complete diversion of attention away from the attack and the young person learning to externalize their attention /focus from their body to external stimuli and learning cognitive behaviour strategies to manage panic and anxiety (Robinson, Hedderly 2015, 2016)
Relevant characteristics in young people with attacks of tic-like movements

- **Alexithymia**: Inability or deficient ability to recognise, feel and describe emotions/ reduced emotional awareness

- **Emotional dysregulation**: A pervasive pattern of poorly modulated or excessive emotional responses (and behavioural responses) to emotive stimuli or distress

- **Intolerance of uncertainty**: A temperamental or dispositional characteristic in an individual which makes them react negatively on an emotional, cognitive, behavioural level to uncertain situations/ events.

- **High interoception**: A sense of the internal state of the body, heightened awareness of internal stimuli

- **Psychiatric co-morbidity**: Higher rates of anxiety/ depression
Differentiating between Tics and Motor Stereotypies

- Age of onset
- Waxing and waning pattern
- Types of movements
- Ease of distraction
- Function of the movements
- Subjective description of movement
- Why differentiate?
Obsessive Compulsive Disorder

- **Obsessions**: recurrent or persistent thoughts, urges or images that are intrusive and unwanted and cause marked anxiety or distress. The individual tries to neutralize the thoughts, urges or images with other actions or thoughts.

- **Compulsions**: repetitive behaviours such as washing, checking or mental activities done to neutralize the obsessions.

- The compulsive behaviours or compulsive mental acts are aimed at preventing or reducing anxiety or distress or preventing some dreaded event or situation.

- The obsessions and compulsions can be time consuming, cause clinically significant distress and cause impairment in social or other functioning of the suffering individual.
OCD and Autism

- Compulsions in OCD vs Repetitive / Ritualistic behaviours in ASD
- What are the drivers of compulsions and drivers of stereotyped / repetitive behaviour
- Egosyntonic vs Egodystonic behaviours
- A spectrum of phenomenon: Tics/ Motor stereotypies or stereotyped behaviours/ ritualistic behaviours/ habits/ compulsions with out obsessions and with obsessions.
Estimates of the prevalence

- Any anxiety disorder among children and adolescents with autism spectrum disorder (ASD) **11% to 84%** (wide variation – depending on the study)

- OCD in individual with ASD: **2.6% to 37.2%** (Postorino et al Emory University Department of Pediatrics and of the Marcus Autism Centre, Atlanta) – **ave 5-8 %**
OCD and ASD

- Most individuals with OCD do not have ASD and most individuals with ASD do not have OCD. However, there are some overlaps:

- OCD is more common than expected among relatives of persons with autism (Bolton et al., 1998; Micali et al., 2004).
- OCD is more common in parents of those children with autism that scored high on repetitive behaviour and stereotypies (Hollander et al., 2003).
- Hoarding is commonly reported in ASD (McDougle et al., 1995).

- People with ASD have higher rates of receiving a diagnosis of OCD than neurotypical individuals (prevalence: 8.2 - 5% vs 2.3%)
- People with OCD have a higher chance (up to 4 times higher) of having a diagnosis of ASD
• Genetic links between OCD and ASD (Meier et al. 2015)

• Another genetic study linking treatment resistant OCD with Asperger syndrome and autism (Ozaki et al., 2003).
Using the OCI to discriminate between OCD, ASD and ASD+OCD*

- Individuals with ASD (n = 171), OCD (n = 108), ASD + OCD (n = 54) and control participants (n = 92) completed the Obsessive Compulsive Inventory-Revised (OCI-R).

- Individuals with ASD + OCD reported significantly higher levels of obsessive-compulsive symptoms than those with ASD alone.

- OCD symptoms were not significantly correlated with core ASD repetitive behaviours as measured on the ADI-R or ADOS.

- Authors concluded that OCD manifests separately from ASD and is characterized by a different profile of repetitive thoughts and behaviours.

Other useful scales

- Children's Yale-Brown Obsessive Compulsive Scales (CYBOCS)
- Children's Yale-Brown Obsessive Compulsive Scales for ASD (CYBOCS-ASD)
Symptom Overlap between Autism Spectrum Disorder, Social Anxiety Disorder and Obsessive-Compulsive Disorder in Adults (Cath et al 2006)

- Authors use the Autism Quotient (AQ) to discriminate between 3 groups ASD vs OCD vs SAD
- Total scores on the AQ for ASD group was the highest
- The sub-scale that really differentiated the ASD group was imagination subscale
- ASD group also scores higher in the communication and attention switching
- Authors however found an over-lap of symptoms as well
Does OCD have an ASD subtype (Bejerot)

• There is a distinct form of OCD in Tics (Holzer et al., 1994; Leckman et al., 1994).

• OCD in Tics is mostly compulsions only and includes symptoms such as symmetry, ordering, blinking, tapping, touching, rubbing and staring rituals (Mataix-Cols et al., 1999,2008), but also with checking, counting and hoarding, at least among adolescents (Leckman et al., 1994).

• A tic-related OCD subtype seems reasonably validated – so could OCD with comorbid ASD a valid OCD subtype?
• McDougle et al. (1995) reported that specific symptoms such as repetitive ordering, hoarding, touching, tapping, rubbing and self-injurious behaviours were significantly more frequent among persons with autism than among persons with OCD.

• Russell et al. (2005) 10 out of 40 subjects with ASD and average intelligence had OCD and 12 were hoarders.

• But currently there is no agreed OCD sub-type in ASD
ASD risks being missed or misunderstood when co-morbid with OCD

• Obsessional slowness, a treatment resistant form of OCD, could be viewed as a form of catatonia – and catatonia is common in ASD (Wing and Shah, 2000).

• ASD may also be misinterpreted as social phobia, generalized anxiety disorder, delusional disorder or dysthymia (Gillberg and Billstedt, 2000) or even more often as personality disorders.
Personality disorder diagnosis in OCD could be a misdiagnosis of ASD with OCD

- In OCD, the reported prevalence of categorical personality disorders ranges between 33 and 87 percent.

- The most common are avoidant, dependent and obsessive-compulsive personality disorders (Baer et al., 1992)

- Cluster A (eccentric: schizoid, schizotypal and paranoid personality) disorders are more prevalent in OCD patients than in other non-psychotic patients (Rossi and Daneluzzo, 2002).
Personality disorder diagnosis in OCD could be a misdiagnosis of ASD with OCD

- Stanley et al. (1990) reported schizotypal features in 28 percent of his OCD cases.

- Since schizotypal personality disorder, at least as defined by Westen and Shedler (1999), is primarily a description of autistic traits, and Rutter (1987) has suggested that the schizoid personality pattern in childhood is Asperger syndrome.

- The resemblances between obsessive-compulsive (anankastic) personality disorder and ASD, especially Asperger syndrome, were pointed out by Gillberg and Billstedt (2000).
OCD treatment challenges in ASD

- Nature of compulsions
- Desire to undo a past event
- Rigidity of compulsions
- Distress induced by the intrusive obsessional thoughts
- Recall of imperfect compulsions
- Over-analytic thinking style
- Central coherence
Summary

• **Up to 22 %** of young people with ASD have *tics* and at least half of these are chronic tics and average 6.2 % have Tourette Syndrome.
• There are unique challenges for individuals with Tics and ASD together

• Up to 30 % of young people with ASD can have OCD although average figure is **5-8 %**
• There are unique challenges for individuals with OCD and ASD including treatment challenges.
• Individuals with identified OCD who have undiagnosed ASD are often not recognised and go on to have treatment resistant OCD or get other diagnoses such as personality disorders, and social anxiety disorder.

• **Both Tics and OCD can be managed through several treatment approaches and therefore must be identified in individuals with ASD**
References


