# Analysis of complexity in paediatric tic presentations and management in CAMHS outpatient services

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## BACKGROUND

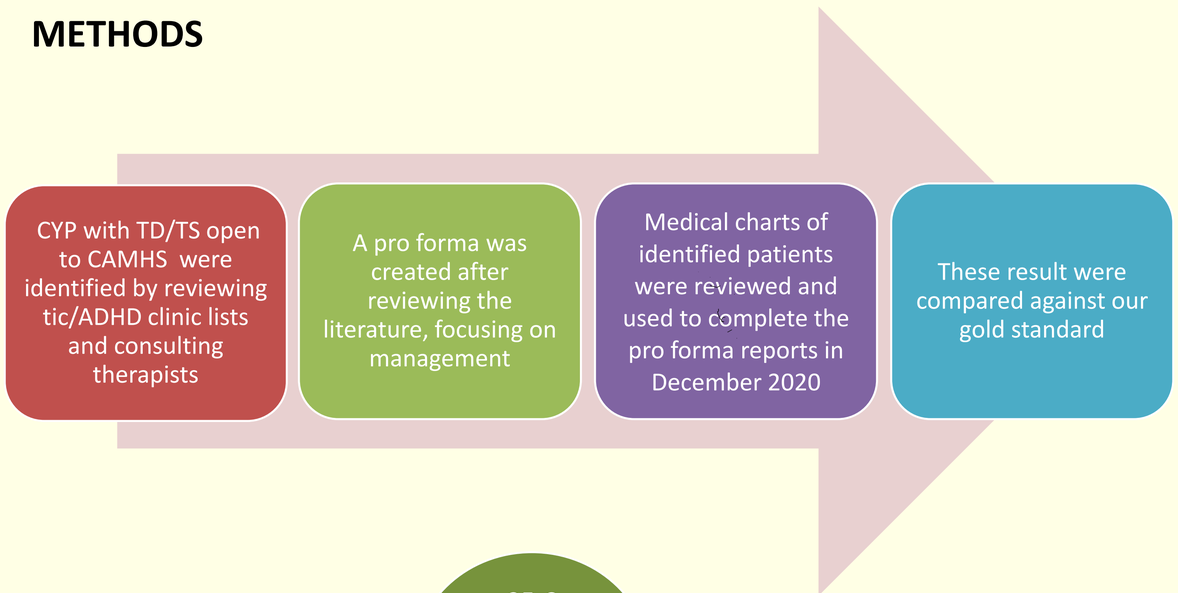
Tics represent sudden, repetitive, rapid and non-rhythmic motor movements or vocalisations. These presentations can lead to significant psychological, social, physical, and functional impairment. It is estimated that most individuals including children and young people (CYP) affected by Tourette's syndrome (TS) or Tic disorder (TD) have concurrent neuropsychiatric complexity to include attention deficit hyperactivity disorder, obsessive-compulsive disorder, anxiety, mood disorder and disruptive behaviours [1].

## AIM

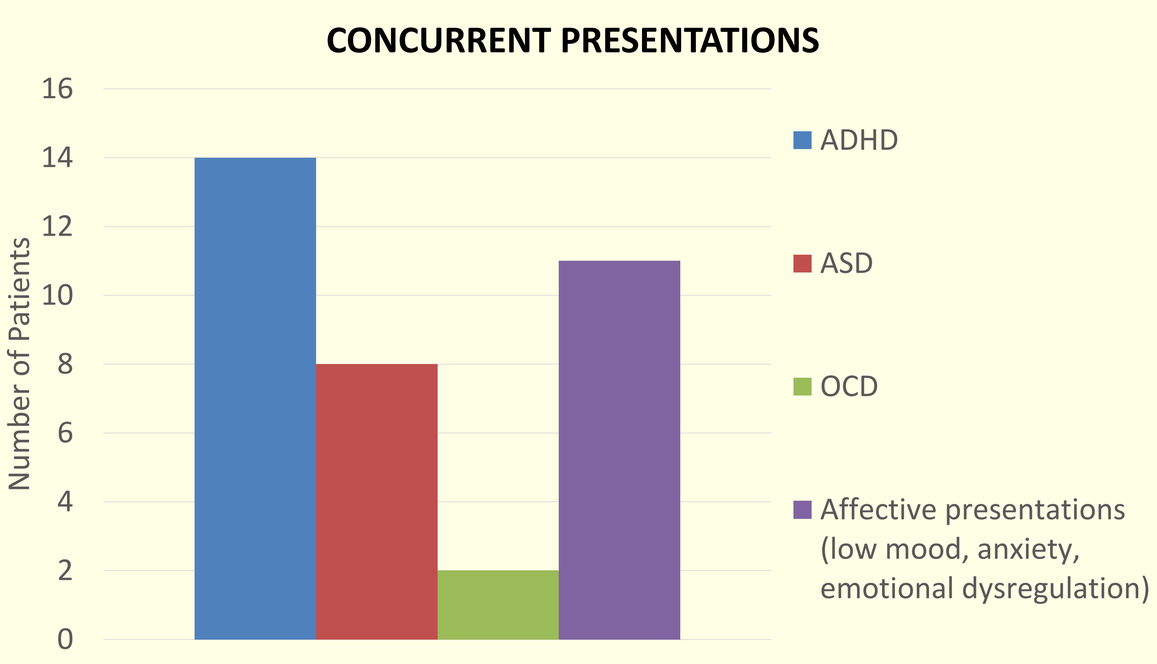
The European clinical guidelines for Tourette's syndrome advises that behavioural treatments such as Habit Reversal Training (HRT) or exposure with response prevention (ERP) is recommended first line for those with tics in the majority of cases, with the option for combined drug treatment as required [2].

Our aim was to compare the practice in Step 3 CAMHS services in Antrim NI to the European clinical guidelines which we used as our gold standard.

## METHODS








## PHARMACOLOGICAL TREATMENT OPTIONS

**Aripiprazole**

- The most commonly used medication in our study (n=6). CYP and their families often preferred this option due to reduced risk of metabolic side effects in comparison to other antipsychotics. Reasons for stopping/switching included paradoxical agitation (n=1) and perceived reduced efficacy (n=1).

**Clonidine**

- (n=3). Research shows similar efficacy to risperidone, however appears to have more unwanted side effects in our sample leading to discontinuation/switching. One CYP was switched due to non-compliance and risk of rebound hypertension. One CYP was switched on balance of cardiac risks given comorbidities and other prescriptions.

**Risperidone**

- Two patients were receiving this medication in December 2020 (n=2).Two other CYP previously taking risperidone discontinued it due to side effects - nightmares and 'chalky taste'. Two further CYP had stopped risperidone due to settling of their tic symptoms.

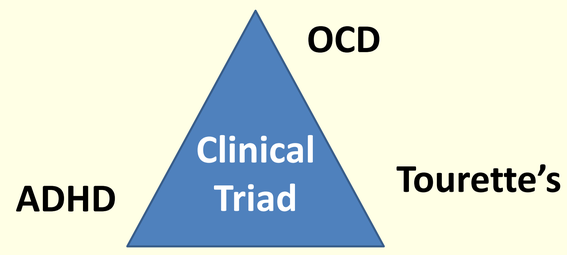
## DISCUSSION

Most individuals affected by tics have concurrent neuropsychiatric complexity [3]. Amongst this group of CYP, in particular, ADHD is high (n = 14). Some studies estimate that the presence of comorbid ADHD is the main determinant of cognitive dysfunction in TS patients [4].

Tics, ADHD and OCD constitute a TS pattern commonly referred to as the TS 'clinical triad' [10]. Full expression of this clinical triad was less evident in our study. This may be a function of sample size although comorbid anxiety spectrum states was much higher (n = 7). It is posited that tic-related OCD may present differently to typical OCD and therefore may be more difficult to identify in assessment [5].

All CYP in our study were offered Cognitive Behavioural Intervention for TS (CBITS) as a first-line intervention apart from two – one had such debilitating symptoms that they were immediately commenced on medication. The other's symptoms were so mild that the consultant and family were agreeable for a 'watch and wait' approach. For 19 CYP therapeutic treatment was enough to help manage their tics alone.

European clinical guidelines do not specify a first, second or third line treatment in terms of pharmacological intervention. It posits that clonidine, along with several second generation antipsychotics are potentially efficacious. Twelve CYP in our service found benefit from medication (see above for details).




## CONCLUSION

Our audit indicated that those presenting with TD/TS to the CAMHS service were receiving both psychological and pharmacological treatment which was in line with the European guidelines for TS, our adopted gold standard.

Management of this disorder is often complex, particularly with comorbid neurodevelopmental and affective disorders and may require more than one trial of medication.

CBITS treatment for management of tic symptoms has relatively few contraindications and is effective for the management of the majority of presentations in this study. Clonidine and second line antipsychotics can be very beneficial to help reduce tic severity however it is important to be mindful of the side effect profile of these medications which require close monitoring for potential adverse impact on CYP.

This study contributes that presentations of TD/TS in CAMHS Antrim, Northern Ireland echo many of the cases in the literature. Further research in terms of pharmacological intervention and the prognosis of the clinical triad may facilitate construction of further future guidelines in this field.

**REFERENCES:** [1] Zheng W, Li XB, Xiang YQ, Zhong BL, Chiu HF, Ungvari GS, Ng CH, Lok GK, Xiang YT. Aripiprazole for Tourette's syndrome: a systematic review and meta-analysis. Hum Psychopharmacol. 2016 Jan;31(1):11-8. doi: 10.1002/hup.2498. Epub 2015 Aug 26. PMID: 26310194. [2] Verdellen C, van de Griendt J, Hartmann A, Murphy T; ESSTS Guidelines Group. European clinical guidelines for Tourette syndrome and other tic disorders. Part III: behavioural and psychosocial interventions. Eur Child Adolesc Psychiatry. 2011 Apr;20(4):197-207. doi: 10.1007/s00787-011-0167-3. Erratum in: Eur Child Adolesc Psychiatry. 2011 Jul;20(7):377. PMID: 21445725. [3] Singer HS. Tics and Tourette Syndrome. Continuum (Minneap Minn). 2019 Aug;25(4):936-958. doi: 10.1212/CON.0000000000000752. PMID: 31356288. [4] Martino D, Ganos C, Pringsheim TM. Tourette Syndrome and Chronic Tic Disorders: The Clinical Spectrum Beyond Tics. Int Rev Neurobiol. 2017;134:1461-1490. doi: 10.1016/bs.irn.2017.05.006. Epub 2017 Jun 9. PMID: 28805580. [5] Shprecher DR, Rubenstein LA, Gannon K, et al. Temporal course of the Tourette syndrome clinical triad. Tremor Other Hyperkinet Mov. 2014; 4. doi: 10.7916/D8HD7SV6