

Elective Report

Objectives

- *What are the prevalent paediatric conditions seen at the community paediatric development centre and describe its prevalence.*
- *To learn about Autism Spectrum disorder.*
- *How is the development centre organized and what services does it offer to young people and their families. How does this differ from acute paediatric services?*
- *To revise paediatric history taking skills and developmental milestones and to reflect on my/observed communication skills with children and their families.*

The main conditions I have seen in the Community Paediatric development centre are children within the autistic spectrum and children with Attention Deficit Hyperactivity disorder (ADHD).

Up until the early 1990s the prevalence of children with Autism Spectrum Disorder (ASD) was thought to be approximately 4/10000. The prevalence is thought to be higher than previously recognised and studies show it to be somewhere between 30-90/10000.

A recent study within the south Thames area estimated the prevalence of ASD in children aged 9-10 years using a screening procedure in a high risk group of children using a large population, followed by a careful diagnosis using standardised assessments. This study showed the total prevalence to be 116.1 per 10000 (95% CI 90.4-141.8). This clearly shows that the prevalence is much greater than previously recognised but is this increase due to better recognition of the condition, broadening the diagnostic criteria or due to a true increased incidence.

Another study looking at ASD in adults within the community again found that in 7461 adults the prevalence of ASD was in the region of 9.8 per 1000 (95%CI 3.0-16.5). The rates were higher in those without educational qualifications and those living in social housing. This result was similar to that found in children and indicates that even though the prevalence is apparently increasing it is likely to be due to improved diagnosis and broadening of the diagnostic criteria and not due to a real increase in the incidence of ASD. It is therefore likely that the cause of ASD is temporarily constant and that approximately 1% of children fall into the autistic spectrum. It is important that these children are looked after by a multi disciplinary team and that all of their needs are met including their medical, educational, social, physical and psychological needs.

Autism Spectrum disorder (ASD) is a neurodevelopmental disorder characterised by impairment of reciprocal social interaction and communication with restricted repetitive behaviours. Language impairment is variable but all children have language delay and there is also usually reduced imagination and an inability for "pretend" play. 30% of children with ASD have an IQ of less than 70. Boys are at an increased risk of ASD (4.3:1) and race, ethnicity and socioeconomic background do not seem to affect its incidence. These problems in social interaction and communication often last into adulthood and lead to difficulties in independent living. It was estimated that ASD cost the economy £90000 per year for an adult and those with higher level functioning tend to be overlooked. ASD is still largely unrecognised in adults (public health importance) but as more children are diagnosed I am sure this will change.

The aetiology of ASD remains largely unknown but risk factors include increased age of parents (especially paternal), low birth weight, IUGR, maternal diabetes and bleeding during pregnancy. Several hypotheses have been put forward to suggest a cause including prenatal exposure to infections and immune activity during the initial periods of neurodevelopment. A recent study showed a higher risk of ASD if the child was conceived in December, January or February indicating that the cause may be viral (6% OR =1.06 95%CI= 1.02-1.10). Children with ASD differ in cytokine profiles, lymphocyte activation and other immunological parameters. More research is needed in these areas.

ASD has a strong genetic basis. Twin studies show a strong genetic contribution in the aetiology and a strong familial aggregation has also been seen. It is thought to involve multiple genes (polygenic) as a single gene has not been identified but as already stated there is likely to be a contribution from both chemical and microbial agents.

There are structural changes in the brain and imaging and electrophysiology investigations reveal differences in information processing between children with Autism and those with typical development. It is thought that the main pathological change in ASD is synaptic dysfunction. There may be an excess of neurons that causes an over connectivity in key brain regions; disturbed neuronal migration during early gestation; unbalanced excitatory/inhibitory networks and/or abnormal formation of synapses.

The following table shows the common signs shown in a child with ASD.

<i>Social development (define ASD from other neurodevelopmental disorders)</i>	Less attention to social stimuli, poor interaction, respond less to others, do not respond to emotions and imitate them
<i>Communication</i>	Delays in speech, delayed babbling, unusual gestures. Repeats words and phrase (echolalia), imaginative play problems
<i>Repetitive behaviour</i>	Stereotypy- repetitive movements, hand flapping, making sounds, head rolling, body rocking. Compulsive behaviour- arranging objects in stacks or lines Resistance to change Ritualistic behaviour- pattern of daily activities Restricted behaviour- limited in focus, interest or activity (single tv programme, toy or game) Self injury
<i>Others</i>	Unusual abilities Superior skills in perception and attention Sensory abnormalities Poor muscle tone, poor motor planning and toe walking Unusual eating behaviours- Selectivity, eating rituals, food refusal

ASD is classified as one of the pervasive developmental disorders and these are listed below:

1. Pervasive developmental disorder not otherwise specified
2. Autism
3. Asperger's syndrome
4. Rett's syndrome
5. Childhood disintegrative disorder

The first three disorders are collectively known as ASD. If a child is suspected to have ASD he will be assessed by a paediatrician and a specialist speech and language therapist. He will also be observed at school/ nursery and at home and a careful developmental history will be taken. There are several screening questionnaires used in the UK which have been developed from the ICD-10 diagnostic criteria for ASD and if the child fulfils enough of the criteria he will then be given a diagnosis.

Some conditions are commonly associated with ASD and they include:

- Genetic disorders- tuberous sclerosis, Angleman's syndrome, Fragile X syndrome

- Mental retardation
- Anxiety disorders
- Epilepsy
- Metabolic defects- Phenylketonuria
- ADHD
- Sleep disorders

There is no cure for ASD but many of the children develop enough language to be able to communicate their needs. There is a lot of support for children and their families. Children with ASD lack social support, relationships and future employment opportunities. Often symptoms become less severe with age and acquiring language before the age of 6, having an IQ of >50 and having a specific skill all predict a better outcome. It is important for the MDT to be involved in the management of a child with ASD. He will need specialist input from SALT team, Occupational therapy, specialist nurses, paediatrician, psychologist and may require educational support if he is to reach his full potential. There are also many support groups available to help parents.

Even with all of this input children with severe ASD are unlikely to be independent as adults. A British study of 68 adults diagnosed before 1980 with an IQ >50 found that 12% achieved a high level of independence as adults; 10% had some friends and were in work with support but 46% needed specialist residential provisions and 12% needed high level hospital care.

The Mid-Sussex Child Development Centre consists of a group of highly specialised professionals working with children with developmental and special needs. Their aim is to assess and possibly diagnose children and to manage and/or treat them as well as to support them and their families. Any professional who knows the child can make a referral to the team who will then sit in an MDT meeting to discuss the child and see who would be most appropriate for the child to see. I am lucky enough to have been able to sit in with all of the professionals to see what their role is in the management of a child with these special needs and to see how they are managed and to understand the importance of the MDT team in looking after the holistic needs of the child. The following professionals are present at the CDC:

- Administration staff
- Nursery nurses
- Occupational therapists
- Paediatricians
- Physiotherapists
- Psychologists
- Specialist health visitors
- Speech and language therapists

- Child protection nurses

As well as attending clinics at the centre the professionals often also carry out home visits to the child's house/nursery. This is often essential in order to assess the child in his own setting and to see how the child interacts and communicates with his peers and other adults. This is especially important if the child may have ASD or ADHD and is often carried out by a specialist speech and language therapist. Once a diagnosis has been made the child will be regularly reviewed by the paediatrician and may require input from the therapists to maximise his quality of life and to be able to go about his activities of daily living and to be able to function to his maximum ability. The team can also provide information of support groups, good sources of information for the parents and encourage them to attend special needs playgroups.

The paediatricians are also involved with giving educational statements for children who require extra help at schools or may require a special needs school. They are also involved with child protection issues and meetings at school to discuss children with developmental/behavioural problems. "Team around the Child" meetings are also held at the school and this involves all the professionals currently working with the child. At this meeting medical, psychological, behavioural and social issues surrounding the child are raised and a management plan is put into place to try and address these issues.

Finally the child protection nurses have a very important role for children who are in care in Mid-Sussex. Their main aim is to support looked after children and young people encouraging healthy lifestyles to achieve optimum health and well being. They carry out an initial assessment with the paediatrician when the child first comes into care and then do a follow up twice a year until the child is five and then once yearly thereafter. Their work includes ensuring the child is medically healthy e.g. regular dental checkups, visual checkups, immunisations up to date, eating healthily, and providing information and education on risk taking activities. Another big role for the child protection nurse is to sit on the fostering panel to approve new foster carers and to run courses for prospective foster carers.

It is perhaps a misconception that Mid- Sussex is a well off area and there are no children living in poverty. There are approximately 30,000 children in the catchment with some living in extreme poverty. There are significant patches of poverty hidden away by better off areas. It is easy for these areas to be missed and for the children not to be able to access facilities and health care provisions. In an area such as East London the majority of people are not well off and government schemes have been put in place such as "Sure Start" to ensure children get a good early start in life. Unfortunately it is less easy to access these schemes in this area.

Compared to my limited time spent in acute paediatrics whilst doing my medical training I have found that Community paediatrics is very much involved with the long term holistic

diagnosis and management of children with developmental and neurodevelopmental disorders and special needs. It has emphasised to me the importance of multi-disciplinary working and the effective communication and management needed for the team to function. They also have plenty of time to carry out a full developmental history and that this is the key in aiding a diagnosis.

It is some time since I did paediatrics at university and I have found my elective very useful in revising the key aspects in taking a paediatric history. I have also been able to revise the developmental milestones and it has been useful to see children with abnormalities in this area. You can read in a book the developmental milestones but I think it is much better to put the theory into practice. I have observed brilliant communication skills with both children and their parents and hope that I will be able to take some of these skills away with me. I feel a lot more confident with communicating with children and found it a pleasure to be able to interact with them effectively. I feel that I did this well and think that this is one of my strengths. All of the professionals interacted well with the children, took their time with them, got down to their level and talked appropriately to the child depending on their age and ability. They also ensured the child was amused during the session and I loved playing with the children. This helped the parents and allowed good observational time for the professional; it also made the child feel at ease.

I thoroughly enjoyed my elective in community paediatrics and am seriously considering a future career in this specialist area. The main things I have taken away with me from my time spent here are the importance of good communication with children and their parents, the importance of the MDT in the diagnosis and management of long term developmental conditions, seeing children with abnormalities in their developmental milestones and learning about ASD and ADHD.

References

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