ADHD in Children and Adolescents: Psychosocial Treatment

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Some Treatment Considerations

• Child factors
  – Age, compliance, health (physical)

• Parent/family factors
  – Preference, family set-up (skills, knowledge)

• ‘Illness’ factors
  – Symptom and impairment severity: school, academic, peers
  – Psychiatric comorbidities: anxiety disorder, ODD/CD
Education

• Information on diagnosis, treatment options
• Facilitates symptom recognition, active participation in treatment, enhance adherence to treatment and to provide patients and families with coping skills
• Developmentally appropriate information

After diagnosis, doctors should provide appropriate education about attention deficit hyperactivity disorder to children, families and teachers. Grade B, Level 1+
Psycho-social Treatment

• Sometimes used interchangeably with ‘behavioural interventions’
• First line treatment*
  – Especially for the young, preschoolers
• May be used in combination with medication
• Collaborative work with parents and school
• Complementary and alternative options included in CPG (parents often keen)
Behavioural Intervention

• Behavioural interventions are aimed at modifying antecedents and/or consequences, in order to change behaviour; includes:
  – Effective commands
  – Token or point system
  – Positive reinforcement
  – Time out
  – Skills training (e.g. social skills)

• Taught to parents and school personnel
Intensive behaviour treatment components in more recent trials:

- Parent training
- School-based treatment (Dr Mariam will discuss)
  - teacher consultation: classroom behaviour management strategies
  - teacher aide
  - daily report card
- Child: summer treatment programme
  - token or point system, positive reinforcement, time out, social skills/sports skills/problem solving skills training
Behavioural Intervention

• Behavioural intervention consistently rated as evidenced-based treatment in systematic reviews and major CPGs since 1990s

• Doctors should consider educating parents of children with attention deficit hyperactivity disorder about behaviour management strategies, or refer them to professionals who can do so [e.g. psychologists]. Grade A, Level 1++
Parent Training

• Studies show parents have
  – Increased parenting stress (Fischer, 1990; Johnston & Mash, 2001)
  – Maladaptive parenting strategies which maintain difficult behaviour (Patterson, DeBaryshe, & Ramsey, 1989)

• Manualized parent training interventions:
  – Positive Parenting Program (Triple P)
  – The Incredible Years Parenting Program
  – Parent-Child Interaction Therapy
  – The New Forest Parenting Program
Parent Training

• Rated as evidence-based intervention by systematic reviews and major CPGs
• Few studies involving adolescents
• Evaluated to be cost-effective, and the positive effects can persist even after 2-5 years
• Cultural considerations, as the parenting programs are developed in Western culture
• Developmental considerations
Parent Training

• Meta-analysis of 8 studies in preschoolers (n=424) show
  – Moderate effect size SMD = −0.77 (−1.21 to −0.34)
  – Concluded that parent training had high strength of evidence and methylphenidate had low strength of evidence

Parent training should be offered for parents of pre-school children with attention deficit hyperactivity disorder. **Grade B, Level 1+**
Parent Training

• Cochrane review of studies involving youth aged 5-18: quality of studies questioned due to lack of blinding

• Doctors should consider referring parents of children and adolescents with attention deficit hyperactivity disorder for parent training programmes offered within the community, particularly when negative parenting practices are identified. **Grade B, Level 1+**
Social skills training

• Hope skills learnt can be generalized
• Content: problem solving, control of emotions, verbal and non-verbal communication
  – Cochrane review: 11 randomised trials involving children aged 5-12, duration 8 to 10 weeks (8 trials) up to 2 years
  – Meta-analysis: no statistically significant treatment effects on social skills, ADHD symptoms
Social skills training

• Parents find it more acceptable than medication

• Although reviews show lack of efficacy, often included as a component of intensive behaviour treatment programme

Social skills training alone is not recommended for the management of ADHD.  

Grade B, Level 1+
Cognitive Behavioural Therapy (CBT)

• Promote self-controlled behaviour (Hinshaw & Erhardt, 1991):
  – Verbal self-instructions, problem-solving strategies, cognitive modeling, self-monitoring, self-evaluation, self-reinforcement

• Reviews show no evidence for CBT (Pelham W et al 1998; Antshel KM & Barkley R 2008)

• No evidence at present that psychological treatment more efficacious for older children (Hodgson K et al. 2012)
• Food colouring and benzoate preservatives
  – Meta-analysis: risk of bias in studies, small subset of patients may improve

• Sugars
  – No evidence

There is no clear evidence for food additives and sugars to be related to ADHD. Parents and children should be advised to control food items containing additives or high sugar content that have been observed to consistently provoke physical or behavioural reactions.  

Grade B, Level 1+
Restricted elimination diet

- Restricted elimination diet
  - Mechanism: hypersensitivity reaction
  - Hypoallergenic food: rice, potato, carrots, peas, lamb, pear, etc
  - Risk of nutritional deficiency
  - Hard to implement

A restrictive elimination diet is not recommended for the management of ADHD. Grade C, Level 2++
Omega-3 Fatty Acid Supplementation

• Main omega-3 fatty acids
  – Eicosapentaenoic acid (EPA)
  – Docosahexaenoic acid (DHA)
  – Alpha-linolenic acid (ALA)

• Mechanisms:
  – Deficiency (shown in some earlier studies)
  – Alteration of biophysical properties of cell membranes
  – AA and DHA may modulate gene expression
  – DHA may protect the brain from free radical damage
Omega-3 Fatty Acid Supplementation

- Heterogeneity among studies
  - Variable dose and ratios, +/- Vitamin E

- Meta-analysis: effect size of 0.31
  - Negative studies may be inadequately powered
  - May have role in treatment augmentation (Bloch MH, Qawasmi A. J Am Acad Child Adolesc Psychiatry 2011)

Omega-3 supplementation may be used as an adjunctive treatment for ADHD. Grade B, Level 1+
Zinc and iron supplementation

• Small studies showing possible mineral deficiencies
• Question about generalizability of findings as studies may have been conducted in regions with endemic deficiency
• Overall no evidence to support use for all children with ADHD
Neurofeedback

• Neurophysiological studies: some children with ADHD have different EEG patterns

• Neurofeedback therapy (or neurotherapy) trains the individual to alter (‘normalize’) EEG rhythm

• Review/meta-analysis: medium effect size of ($d = 0.69$) (Lofthouse et al 2011 J Att Disorders)

• Methodological concerns (e.g. lack blinding), lack longer term data
Neurofeedback should not be used alone for the treatment of ADHD. Grade B, Level 1+
Cognitive remediation

• Working memory performance often impaired in children with ADHD
• Computer-based training may improve working memory and generalize
• Reviews of studies did not show improvement in ADHD symptoms or function

Cognitive remediation alone is not recommended for the treatment of ADHD with significant impairment.  
Grade A, Level 1+
Some children with ADHD may have sensory processing difficulties or motor skill deficits.

‘Sensory processing disorder’ not medically recognized disorder.


A referral to an Occupational Therapist may be considered for children with sensory processing or motor skill deficits.

Grade D, Level 3
TCM and Acupuncture

• TCM: review suggested high likelihood of publication bias, heterogeneity among the TCM preparations, trial quality (Lan Y, Zhang L, Luo R. J Int Med Res 2009)

• Acupuncture: Cochrane review suggested no quality trial

• At present, not enough evidence to recommend their use
Care Transition

• Usually first contact with child services
• Transition to adult service for those with continuing needs
  – Communication and information

Clinicians who treat adolescents with attention deficit hyperactivity disorder should plan for the transition to adult health services in advance, discuss this with the patients and their families, and ensure that they can continue to receive care. Grade D, Level 4
Thank You

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