Psychopharmacology in Children

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Current understanding of childhood mental illness

Genetic influences
- Behavioural genetics
- Genetic syndromes
- Molecular genetics

Brain function

Circuitry
- PFC
- Striatum
- Association cortex
- Medial temporal lobe
- Amygdala
- Hippocampus

Modulation
- Autonomic
- Hormonal
- Chemical

Information Processing
- Cognitive control & reward
- Language & reading
- Social information processing
- Threat processing

Phenotype
- PDD
- Psychosis
- DBD
- ADHD
- Mood disorders
- Anxiety disorders

Environmental influences

Lonavla P.G. CME, Psychopharmacology

Why is psychopharmacology important for us?

- Pharmacological treatment is an important intervention to treat childhood psychiatric disorders
- Use of psychotropic medication in children has increased dramatically over the past decade (Zito & Safer, 2005)
- A small number is approved for use in children; many others are used off-label (Wilens, 2004)
- Children are not miniature adults and evidence from adult psychopharmacology cannot be extended to children
- Safe and appropriate use of psychotropic medications can enhance outcomes for children and adolescents with psychiatric illnesses

Why has the use of psychotropics increased in children & adolescents?

- Increasing support for the biological basis of some childhood psychiatric disorders
- Evidence base growing for the efficacy of psychotropic agents in the treatment of these childhood illnesses
- Efficacy and safety data for single pharmacological agents in the acute treatment of various psychiatric disorders in children are available
- Without treatment (both pharmacological & psychosocial) they can experience short- and long-term distress and impairment
- Advocacy efforts to identify childhood psychiatric disorders and treat
- Marketing efforts of pharmaceutical companies (Walkup et al 2009)

Guiding Principles in Child Psychopharmacology

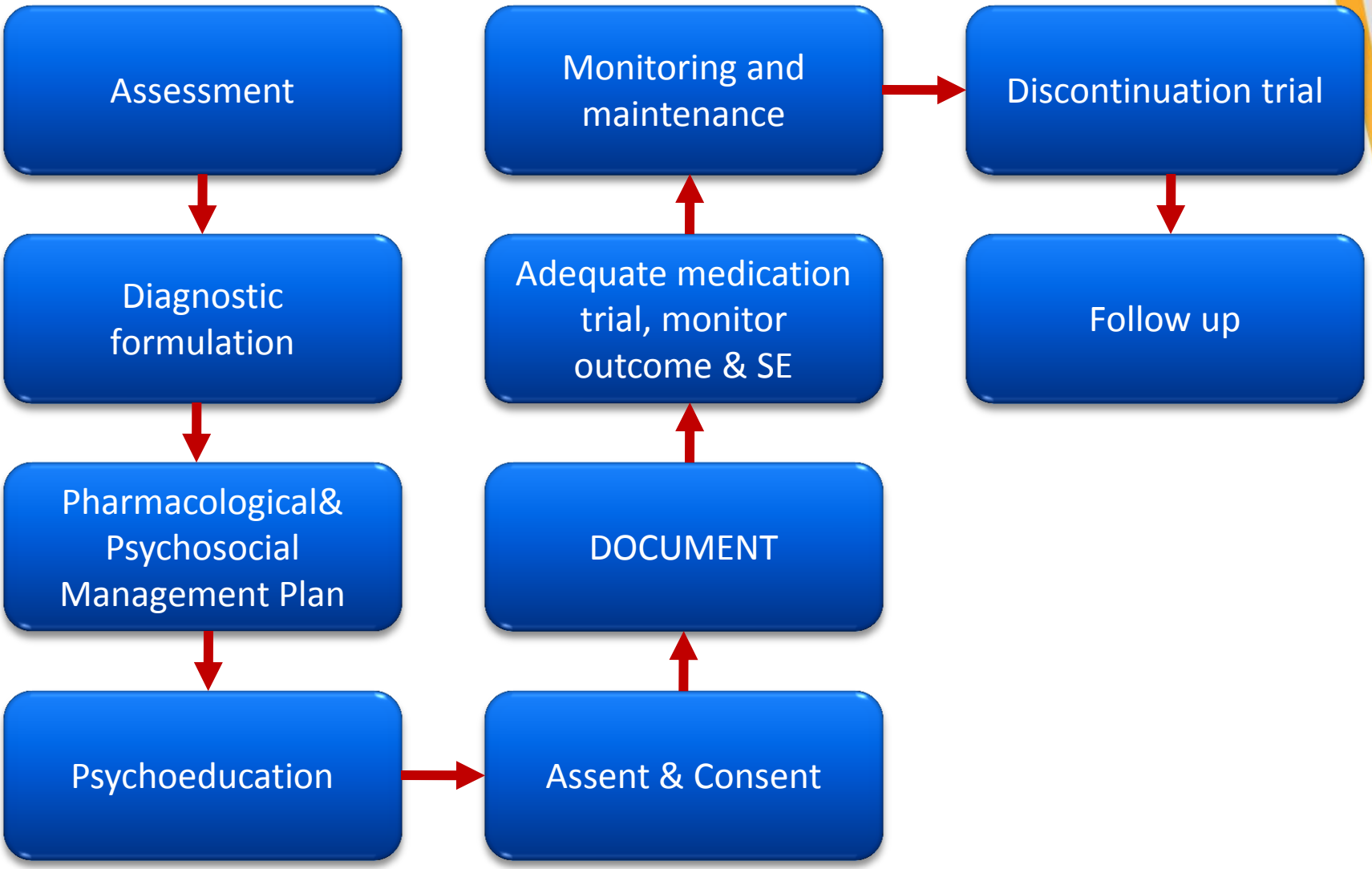
- Role of development
  - May require higher weight adjusted doses
  - Developmental differences in the maturation of noradrenergic pathways
- Limits to categorical diagnoses
  - High occurrence of comorbidity
- Target symptoms and the integration of data from multiple informants
  - Behavioural checklists, self-reports, parent/teacher ratings, clinician ratings
- Role of caregivers and the meaning of medication collaboration
  - Explain to the child and family the diagnosis, treatment options, medication chosen, dose schedule, potential adverse effects
  - Big role in ensuring compliance

- Adverse effects: Monitoring risks and benefits
  - Open – ended general inquiry; drug specific queries/checklist; use of detailed review of body systems
  - Other issues in medication management: intercurrent illness, other concomitant medications, vitals, growth monitoring, laboratory tests and drug monitoring which is medication specific
- Psychopharmacology in context and combination of therapeutic modalities
  - One element in a multi-modal individualised treatment plan
  - Significant evidence base for combined treatments
- Empirically informed, evidence based clinical decision making
  - Class A: good empirical support
  - Class B: fair support, positive but inconsistent results or positive results from small sample trials

"If you only have a hammer, you tend to see every problem as a nail"

– Abraham Maslow

Best Practice Principles


Assessment
Diagnostic formulation
Pharmacological& Psychosocial Management Plan
Psychoeducation
Assent & Consent
DOCUMENT
Adequate medication trial, monitor outcome & SE
Monitoring and maintenance
Discontinuation trial
Follow up

"The doctor may also learn more about the illness from the way the patient tells the story than from the story itself"

- James B. Herrick

EVALUATION

" A smart mother makes often a better diagnosis than a poor doctor"

– August Bier

Assessment…….1

- Identify those symptoms that can be addressed pharmacologically and those that should be addressed psychosocially
- Identify psychosocial factors that may impede an adequate and safe medication trial or confound the assessment of outcome
- Thorough history from multiple informants
- Other important sources of information – extended family, nanny, school personnel
- Review previous treatment records, medical records
- Medical history, medications – OTC, alternative

Assessment……2

- Pay careful attention to the clinical presentation
- Significant symptom overlap present in childhood psychiatric disorders
- Liaison with other professionals
- Pharmacological and psychosocial treatment plan
- Disorder specific rating scales at baseline and during the course of treatment may be useful in measurement of improvement and outcome

Pharmacological treatment plan

Acute

- Initiation of medication
- Dose adjustment to maximise response & minimise SE

Maintenance

- Consolidate gains made which results in remission or recovery

Discontinuation

- If clinically indicated, medication is tapered with minimal risk for relapse / recurrence
- Monitoring plan after discontinuation

What should the clinician do when he/she considers a particular medication?

- Starting Dose
- Timing of Dose Changes
- Estimated maximum dose or blood level
- Strategies for monitoring & managing medication SE
- Duration of trial
- Assessment strategies
- Strategies in case medication unsuccessful
- Clear rationale for medication combinations

What are the components in psycho-education?

- Disorders signs & symptoms
- Target of treatment, course, common SE
- Potential evolution of symptoms, long term prognosis
- Risk and protective factors
- Specifics of the medication treatment plan
- Storage, adherence and monitoring benefits and SE

If the drug is not working then…..

Diagnostic accuracy

Comorbid disorders

Psychosocial factors

Pharmacotherapy – not adequate

Medication compliance

Non-pharmacological treatment

Case Vignette

- “S”, a 4 year old boy, only child, non-consanguineous parentage, FH of ADHD in father, dysthymia in mother, marital discord and permissive, inconsistent parenting style, with history of delay in speech, presented with history of oppositional defiant behaviour, hyperactivity, aggression, irritability and insomnia
- Very little meaningful speech. Points to objects
- Social skills poor. Wants to mingle but anxious and aggressive
- Not going to school. Significant complaints
- On medication since 3 years of age, no improvement
- Was on Clonidine 25 µg/day, Carbamazepine 300mg/day, Clozapine 25 mg/day, Clonazepam 0.5 mg/day
- Repeated infections, sore throat

Is that a good prescription?

In conclusion

- Psychopharmacology – a science to be applied artfully
- Medication should always be part of a comprehensive, integrated treatment plan
- Medication cannot treat “all’’ the symptoms
- High quality assessment
- Comorbidity is the rule rather than the exception – always look for it
- The child & family are active partners in treatment
- Psychoeducation, psychoeducation, psychoeducation
- Psychoeducation is an ongoing process
- Keep up with the times!

"Medicine is a science of uncertainty and an art of probability"

– William Osler

"Never forget that it is not a pneumonia, but a pneumonic man who is your patient".

- William Withey Gull

Thank You

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References

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- Stahl, S.M. Essential Psychopharmacology: The Prescriber's Guide, Cambridge University Press, Cambridge, UK, 2007
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SYMPTOM BASED APPROACH

Symptoms	
Likely to respond	Inattention, impulsivity, hyperactivity, tics, obsession, psychotic symptoms, labile mood etc.
Less likely to respond	Aggression, rituals, self-injury etc.
Unlikely to respond	Skills deficits in academic, social, sports domain etc.