CME

Childhood anxiety disorders

Approach to intervention

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ABSTRACT

OBJECTIVE To present an approach to intervention in childhood anxiety disorders

SOURCES OF INFORMATION This paper is based on selected findings from a MEDLINE search for recent literature on childhood anxiety disorders and on my experience as a child psychiatrist and researcher in a specialized anxiety disorders clinic.

MAIN MESSAGE Children with symptoms of high sympathetic arousal; persistent worries or intrusive thoughts; and extreme clinging, avoidance, or repetitive behaviours that interfere with daily functioning should be investigated for anxiety disorders. Counseling parents, relaxation techniques, and incentives for "brave" behaviour can often return children with mild disorders to age-appropriate functioning. Children who are severely impaired or fail to respond to these simple interventions might require medication or referral for cognitive-behavioural therapy.

CONCLUSION Family physicians can play an important role in recognizing and intervening early in childhood anxiety disorders.

RÉSUMÉ

OBJECTIF Présenter une approche d'intervention en cas de troubles anxieux chez l'enfant.

SOURCE DES RENSEIGNEMENTS Cet article se fonde sur différentes constatations tirées à partir d'une recension dans MEDLINE d'ouvrages récents sur les troubles anxieux chez l'enfant et sur mon expérience à titre de psychiatre pédiatrique et de chercheuse dans une clinique spécialisée en troubles anxieux.

PRINCIPAL MESSAGE Les enfants qui présentent des symptômes d'activation sympathique élevée; de préoccupations persistantes ou de pensées intrusives; et de comportements d'extrême attachement, d'évitement ou répétitifs qui nuisent au fonctionnement quotidien devraient faire l'objet d'une investigation de dépistage de troubles anxieux.

Du counseling auprès des parents, des techniques de relaxation et des mesures d'encouragement pour un « bon » comportement peuvent souvent permettre aux enfants souffrant de troubles bénins de retrouver un comportement approprié à leur âge. Les enfants sérieusement affectés ou qui ne répondent pas à ces simples interventions peuvent avoir besoin de médicaments ou d'une demande de consultation en thérapie cognitive-comportementale.

CONCLUSION Les médecins de famille peuvent jouer un rôle important dans la reconnaissance des troubles anxieux chez l'enfant et dans une intervention sans délai.

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Anne-Marie (not her real name) was a 10-year-old girl from an intact, supportive family who was described as "anxious from birth." She had been a cautious, shy preschooler, but she adapted well to grade 1 and began making friends and succeeding academically. She presented several times with chronic, diffuse abdominal pain that was worst in the morning and never present at night. She had missed about 20 days of school during the previous year because of the pain. She also avoided school field trips, fearing the bus would crash. Her parents reported she had difficulty falling asleep and frequently asked for their reassurance.

She was worried that she and members of her family might die. She was unable to sleep at all when anticipating a test. She could not tolerate having her parents on a different floor of the house from herself, and she checked the doors and windows in the evenings fearing intruders. Her clinging, need for constant reassurance, and school attendance problems were both frustrating and upsetting to her parents.

She had not experienced any traumatic events, although she reacted very strongly to the television images of September 11, 2001. One of her grandparents had died the previous year. A maternal aunt had recently been treated with fluoxetine for depression and was described as "a nervous person."

Anne-Marie has symptoms typical of a childhood anxiety disorder. Such disorders occur in about 10% of children, equally in boys and girls before puberty.[1] Anxiety disorder is diagnosed when anxiety is sufficient to interfere with daily functioning. Her anxiety already affects school attendance and sleep. Without intervention, these effects can increase and interfere to a progressively greater extent with age-appropriate functioning. Persistent anxiety also places patients at risk of developing mood disorders or substance abuse disorders in the future.[2]

Fortunately, childhood anxiety disorders can be readily recognized in family practice, and there are interventions that reduce their debilitating effects. This paper describes such interventions where anxiety is the primary problem and outlines indications for referral to specialists. An approach to children with comorbid presentations is described in Manassis and Monga.[3]

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Sources of information

The approach described is based largely on my experience as a child psychiatrist and researcher who leads a specialized outpatient childhood anxiety clinic in a children's hospital. The approach is entirely consistent with practice parameters outlined by the American Academy of Child and Adolescent Psychiatry (level III evidence).[4] A thorough MEDLINE search for recent relevant articles revealed that two treatments have undergone more rigorous evaluation. Cognitive-behavioural therapy (CBT) has been shown to be efficacious in several randomized controlled trials by several research groups (level I evidence).[5-7] Randomized controlled trials have also shown that pharmacotherapy with fluvoxamine and sertraline is efficacious for children with various anxiety disorders (level I evidence).[8,9]

Recognizing anxiety disorders in children

Many children experience fears; some fears are developmentally normal. Children with anxiety disorders, however, experience persistent fears or other symptoms of anxiety for months, with attendant impairment of age-appropriate functioning at home, at school, and with peers.[10] Children can experience all the anxiety disorders experienced by adults described in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV).[10] They can also experience separation anxiety disorder and selective mutism (failure to speak in certain social situations, thought to be related to social anxiety), which are unique to children.[10] Anne-Marie's protracted course (1 year) and inability to fall sleep, attend school regularly, go on school field trips, or face tests without extreme duress are all developmentally inappropriate,

suggesting an anxiety disorder. Such compromised functioning necessitates treatment, though in some cases, children and families decline treatment and "live" with the anxiety.

Given Anne-Marie's prominent worries and reassurance seeking (a common childhood equivalent of worrying), diagnostic enquiry would probably indicate generalized anxiety disorder.[10] This disorder is characterized by excessive anxiety and worry about various events and activities more days than not for at least 6 months.[10] The worry must be difficult to control, be associated with clinically significant distress or impairment, be accompanied by at least one physiologic symptom of anxiety (three in adults), and not be accounted for by another Axis I disorder, medical condition, or substance.

In preadolescent children, however, anxiety disorders are highly comorbid.[11] For example, Anne-Marie also has symptoms suggesting separation anxiety (physical distress when separating from parents to go to school, inability to be on a different floor of the house from her parents) or a specific phobia (fear of field trips). In guiding intervention, the prominence of certain aspects of anxiety can be as informative as the specific diagnosis. Aspects of anxiety are listed in **Table 1**.

To monitor for gradual change with treatment, symptoms observed in children can be quantified in some way, such as frequency or severity on a 10-point scale, degree of interference with daily activities, or child's ability to cope. These data constitute a baseline to allow for objective evaluation of change over time. A standardized rating scale, such as the Multidimensional Anxiety Scale for Children,[12] can also be used.

To screen quickly for one or more anxiety disorders in children, four questions are often useful.

- Does the child worry or ask for parental reassurance almost every day?
- Does the child consistently avoid certain age-appropriate situations or activities, or avoid doing them without a parent?
- Does the child frequently have stomachaches, headaches, or episodes of hyperventilation?
- Does the child have daily repetitive rituals?

These questions address the main thoughts, behaviours, and feelings related to anxiety seen in children. A positive response to any question suggests reviewing diagnostic features for that disorder in the DSM-IV.

Table 1. Aspects of anxiety in children, common symptoms, and psychological interventions

COMMON SYMPTOMS INVOLVING THOUGHTS
• Worries
• Requests for reassurance
• "What if…" questions
• Upsetting intrusive thoughts (obsessions)
PSYCHOLOGICAL INTERVENTIONS FOR ANXIOUS THOUGHTS
Counsel child and parent on:
• Keeping things in perspective
• Soothing activities
• Modeling effective coping
• Distinguishing thought from action (for obsessions)
COMMON SYMPTOMS INVOLVING BEHAVIOURS
• Clinginess or difficulty separating
• Avoiding feared situations
• Tantrums when facing fear
• "Freezing" or mutism in feared situations
• Repetitive rituals (compulsions)
PSYCHOLOGICAL INTERVENTIONS FOR ANXIOUS BEHAVIOURS
• Exposure to feared situations, often in a stepwise fashion, with calm encouragement and incentives
• For rituals, combine exposure with *not* doing the ritual
COMMON SYMPTOMS INVOLVING FEELINGS
• Panic attacks
• Hyperventilation
• Stomachaches
• Headaches
• Initial insomnia
PSYCHOLOGICAL INTERVENTIONS FOR ANXIOUS FEELINGS
• Acknowledgment of symptom
• "Box" breathing
• Diaphragmatic breathing
• Progressive muscle relaxation

First, it is important to rule out conditions that sometimes mimic childhood anxiety disorders.[2,4] Caffeine (often consumed as cola beverages by children) and stimulants or other sympathomimetic medications (eg, overuse of salbutamol sulfate in asthmatic children) can produce symptoms of anxiety. Hyperthyroidism should be ruled out when

anxiety is accompanied by other thyroid symptoms. Anxiety-related symptoms (eg, abdominal pain) can also have physiologic causes.

In Anne-Marie's case, the nature of her pain was consistent with anxiety and merited only limited investigation. Occasionally, however, anxious children have other concurrent illnesses. Depending on specific presentation, psychiatric differential diagnoses can include depression, attention deficit disorder, oppositional defiant disorder, learning disability, trauma (suspect if a previously easygoing child suddenly becomes anxious), eating disorder, or autistic spectrum disorder. Any of these conditions can also be comorbid.[2]

Stressful factors in a child's life should be sought.[4] Bullying, excessive academic pressure, and family conflicts are common stressors that can be ameliorated. Families of anxious children can become frustrated and acrimonious in response to a child's anxiety. Frustrations often decrease when parents are involved as partners in treatment.[13] In Anne-Marie's case, the possibility of unresolved grief related to the death of her grandparent should also be explored.

Interventions

Psychological interventions. Helpful psychological interventions are based on understanding anxiety as a problem that can result in cognitive, behavioural, and physiologic symptoms (**Table 1**). Cognitive-behavioural therapy targets these symptom clusters, but is often difficult to access quickly in primary care. Simple interventions based on CBT can be used, however, especially if parents are engaged in treatment. *Keys to Parenting Your Anxious Child*[14] describes helpful strategies for parents that can be implemented with minimal guidance from professionals. It contains a simple algorithm for psychological interventions with anxious children. Parents might also find information for families on the websites **www.aacap.org, www.baltimorepsych.com**, and **www.mentalhelp.net** helpful.

Cognitive symptoms, such as those characterizing Anne-Marie's generalized anxiety disorder, respond well to adults' taking children's concerns seriously, but then offering realistic, concrete reasons that what the child fears is unlikely to happen. "It's as likely as winning the lottery" or "Look how many times it hasn't happened" are simple ways of explaining probability to youngsters. Helping children take steps to deal with threats (eg, studying if a test is feared) is also helpful. Parents and professionals can "talk out loud" when experiencing stress (eg, "I'm nervous about driving in this storm, but I've done it before and I know I'm a good driver") to model healthy coping. When anxiety is extreme, parents should stop talking and focus instead on soothing their children.

Gradual desensitization by frequently and repeatedly facing mildly threatening situations and then more seriously threatening ones is the cornerstone of treating phobias and separation anxiety.[6] For children, tracking progress using charts and offering points or stickers for "brave" behaviour is often motivating. Working toward a special activity with a parent is a nice reward that does not have to be expensive. Advise parents to work with children consistently and calmly, as negative emotion can undermine the best desensitization system. Encouragement should express confidence, but also acknowledge children's feelings (eg, "I know it seems hard, but you can do it!" instead of "It's easy, anybody could do it").

For anxiety-related physical symptoms, children as young as 4 years can learn relaxation techniques when they are described simply (eg, "slow, balloon breathing" for diaphragmatic breathing; "spaghetti legs" for muscle relaxation). They are more likely to use relaxation exercises if other family members do them as well, and they often benefit from practising regularly at bedtime before using them for anxious situations. "Box breathing" is a particular variation for children who hyperventilate. Ask children to inhale to a count of four or five, hold their breath for the same count, exhale to the count, and then wait for the same count to breathe again. All anxiety symptoms should be acknowledged as "real" experiences, but related to the body "tensing up" with anxiety.

Psychological interventions applied inconsistently, in a conflicted family environment, or to children with severe anxiety needing medication often do not succeed.

Medical interventions. Medication can be used for moderately-to-severely anxious children when risk of medication side effects is offset by risk associated with untreated anxiety. Anne-Marie is moderately impaired by anxiety. If CBT is readily available, it might be possible to treat her without medication. If CBT is unavailable or there is a waiting period of several months to obtain it, medication should be considered. Anxious children who are younger than about 8 years, cognitively impaired, or non–English-speaking might not benefit from CBT and will need pharmacotherapy.

For anxiety disorders in children, selective serotonin reuptake inhibitors (SSRIs) are currently considered first-line medications.[15] All SSRIs have been used for children, and no clear evidence indicates one is superior to another. The largest randomized controlled trial to date used fluvoxamine.[8] Family history of response is often helpful in choosing a medication; if there is no family history, choice is related to side effect profile. Medications range from fluoxetine (most activating) through citalopram and sertraline to fluvoxamine (least activating, potentially sedating). Recent findings suggesting increased suicidal thoughts in children taking paroxetine have resulted in a Health Canada warning to avoid this medication in children. If a child is already taking this medication, however, it is important not to discontinue it suddenly to avoid an influenzalike "discontinuation syndrome."

Children show a slightly higher incidence of behavioural activation on these medications than adults do, so many clinicians start children on less activating agents, such as fluvoxamine, sertraline, or citalopram. Fluoxetine is the only SSRI currently available in liquid form, however, so it is advantageous for younger children who cannot swallow pills or need very precise dose titration. All SSRIs can result in nausea or changes in sleep patterns early in treatment, but these often resolve within 1 week. Side effects persisting beyond 1 week merit reevaluation of a child's tolerance of the medication and of the dose. The possibility of sexual side effects should be discussed with teenagers. More information and patient information sheets can be found in Bezchlibnyk-Butler and Jeffries.[16]

Regardless of SSRI chosen, you should establish a baseline for one or more target symptoms to monitor for gradual change. Dosage should be started low (eg, 25 mg of sertraline or 10 mg of fluoxetine for school-aged children) and increased every 2 weeks or so as tolerated. This rate of increase balances the need to achieve results in a reasonable period with the need to minimize side effects. Children's responses to SSRIs vary widely, and there is no simple mg/kg rule to calculate a target dose. When the maximum tolerated dose is reached, it must be maintained for at least 6 weeks (though some children respond in 2 weeks or less) before concluding that it is ineffective. Switching to a second medication after an inadequate trial of the first is a common therapeutic error. When treatment succeeds, it should be maintained for 6 to 12 months before attempts to taper it. Tapering should be done slowly, reducing the dose by one quarter to one third about once a month and checking for reemergence of symptoms.

Benzodiazepines can be used to help manage specific, time-limited, anxiety-provoking situations, such as airplane flights for children with flying phobia. Sublingual lorazepam (usually 0.5 mg for children) can be used in these situations, or clonazepam (0.25 to 0.5 mg), a longer-acting benzodiazepine, if the situation lasts more than a few hours. Tricyclic drugs were used for children in the past but are currently considered second line due to risk of cardiac conduction disturbances.

When to refer

When children's anxiety impairs them severely, the approach described above might not be sufficient. If Anne-Marie stopped attending school completely for several weeks despite interventions, referral to a child psychologist or child psychiatrist would be appropriate. Children who are moderately anxious but fail to respond to treatment also merit referral. Certain disorders, such as obsessive-compulsive disorder, are difficult to treat effectively in primary care. When child psychiatry and psychology resources are scarce, consultation either face-to-face or

through a telepsychiatry program, such as that available through the Hospital for Sick Children in Toronto, Ont, could be helpful.

Anne-Marie was treated by her family doctor because there was a 9-month wait to see a child psychiatrist. Because her abdominal pain did not suggest an organic cause, physical examination and blood tests were the only investigations done. Results were all normal. Parents' report and an interview with Anne-Marie were used to rule out grief reaction to her grandparent's death.

Anne-Marie and her parents were given information and educational materials about childhood anxiety disorders and their treatment. She was started on 25 mg of sertraline; the dose was increased to 50 mg after 2 weeks. She got diarrhea when the dose was increased further, so it was maintained at 50 mg. She had a noticeable response within 1 month. Her parents were encouraged to do relaxation exercises with her every evening at bedtime and not to discuss worries with her at that time.

Her parents charted her school attendance, and offered her a small reward (a chance to watch a favourite television program) if she attended the whole day. Her abdominal pain was acknowledged as real, but was reframed as a temporary result of "tense muscles," as it subsided within half an hour of entering the school building. Although she never became an adventurous child, Anne-Marie's sleep and school attendance improved dramatically.

Conclusion

Children with mild-to-moderate anxiety disorders can be recognized and treated in primary care using interventions based on CBT, sometimes with concurrent pharmacotherapy with SSRIs. Anxious children who deteriorate or are more seriously impaired warrant referral to a specialist.

Competing interests

None declared

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EDITOR'S KEY POINTS

- About 10% of children have anxiety disorders severe enough to interfere with daily functioning. These children are usually brought by concerned parents to their family doctors.
- Simple screening questions can identify children who need more extensive examination. Physicians should check for comorbid medical conditions, such as hyperthyroidism.
- Psychological interventions, such as cognitive-behavioural therapy, can address anxious thoughts, behaviours, and feelings. Parental involvement is essential.
- Pharmacotherapy has also been successful with selective serotonin reuptake inhibitors, which should be started at low doses, increased gradually, continued for at least a year, and tapered slowly.

POINTS DE REPÈRE DU RÉDACTEUR

- Environ 10% des enfants souffrent de troubles anxieux d'une gravité suffisante pour nuire à leur fonctionnement quotidien. Ces enfants sont habituellement amenés en consultation auprès d'un médecin de famille par des parents préoccupés.
- De simples questions de dépistage peuvent permettre d'identifier les enfants qui ont besoin d'une investigation plus approfondie. Les médecins devraient vérifier l'existence de problèmes médicaux concomitants comme l'hyperthyroïdie.
- Les interventions psychologiques, comme la thérapie cognitive-comportementale, peuvent régler les problèmes de pensées, de comportements et de sentiments d'anxiété. La participation des parents est essentielle.
- La pharmacothérapie a aussi été utile, notamment avec les inhibiteurs sélectifs du recaptage de la sérotonine commencés à faible dose, augmentés graduellement, continués pendant au moins un an, puis réduits lentement.

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