Pinnacle Pediatrics
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Yes, I have to start my Newsletter once again by discussing Covid-19. But this will be brief. Truthfully, for the hyperspeed world of Covid research, there is not that much new to report since my last Update a few weeks ago. The good news is that cases of Covid are falling in many areas of the country, including ours. The bad news is that a variant of the Omicron variant is now circulating and causing concern in the scientific community. We will have to wait to see how much of an impact that will have.

As discussed previously, Omicron has proven to be extremely contagious, but not as virulent as prior strains. Unfortunately, this is leading to record numbers of deaths, due to the shear volume of patients, even though a smaller percentage of those becoming infected with this variant of SARS-CoV-2 are becoming seriously ill. Our vaccines, though not as protective against infection as with prior strains, are still proving to be extremely effective against severe disease. In fact, 3 doses of the vaccines are near 100% effective against death. Three doses have proven far more effective against Omicron than 2. Yet, the uptake of the 3rd, or "booster" dose has been very disappointing. To be honest, this is perplexing to me. If an individual has made the wise decision to vaccinate themselves or their children, why is there hesitancy to get the 3rd dose? I realize the answer has to be in the false and misleading information that is being so furiously promulgated by anti-vaxxers. But this is still mystifying to me. After billions of doses have been given, and we have seen the tremendous efficacy and safety, including now in the pediatric (over age 5) population, why is there this hesitancy? Yes, the definition of "fully vaccinated" should be 3 doses of vaccine in those over age 12 (hopefully over age 5 soon), just like most of our vaccines that require multiple doses.

Breaking news (on the most common question I am asked). Pfizer/BioNTech submitted study results to the FDA on Feb. 1 and requested an EUA to administer their vaccine to children age 6 months – 5 years. Their initial studies failed to demonstrate an adequate immune response in this age group. But they adopted a different protocol that apparently now does show sufficient efficacy and safety, to justify administration. If their data passes review, immunization in this age group could start in March.

There is encouraging news on the topic of outpatient therapeutics as well. The anti-viral pills, by Merck and Pfizer, are rolling out, though still being reserved for high-risk individuals. One monoclonal antibody is effective against Omicron. Remdesivir,

previously utilized only for inpatients, was recently approved for selected outpatients. In the coming months it is likely that these therapeutics, and others, will play a much larger role in the treatment of this disease.
In light of all of this, I do believe it is fair for the fully-vaccinated to resume a close proximity to their pre-pandemic lives. Even for those families with children age 5 and under, the risk is so small, that I do believe you can treat this the way we have treated Flu in recent years. Yes, make good decisions about avoiding sick people and crowded indoor conditions. It is really only the unvaccinated who are dying of this disease now, so the rest of us can literally take a deep breath of relief.

This is my annual "What to do when your child is sick" Newsletter. As always, there are additions and changes from prior year's Newsletters, so I do encourage even "veterans" of our practice to read this. I also encourage you to keep it handy, as it will answer many of your questions if (when) your child becomes ill. It will also be posted on my website, pinnaclepediatrics.com, under Newsletters, for future reference. I did not include a section on Covid. The rapidly-changing information on this topic would make that section obsolete too quickly, so I will continue to send out updates periodically on this as I have been doing.

I realize you all want to be "done" with Covid. We also want to be "done" with the political acrimony in our country, stink bugs and "Please, don't hang up the phone, I am calling with important information about...". I will reiterate what I said in the last Update, I do believe this is the year this will turn into an endemic illness like the Flu, that we fight but learn to live with, as opposed to the global pandemic that has killed almost 800,000 persons in the U.S., and millions worldwide. Now, for info on how to fight many of the other infections that your children are likely to encounter, please read on.

Fever

Almost all of you have heard me preach that fever is not dangerous, it is simply a sign of infection. My concern is not the fever, but what is causing the fever - what is the infection and, even more important, how serious does it appear to be. Any time a child has a fever, or any symptom of illness, the most important questions to ask are..."How is the child acting?" and "How is the child drinking?" If these two items seem to be okay, then it is very unlikely that there is a serious problem. Conversely, if the child is extremely irritable or lethargic, or refusing to drink for an extended period, then we need to be concerned.

Any time a child has a fever or is ill, she is entitled to act "sick", just not "real sick". She may be fussy, sleepy, not eat well. But, she needs to drink, she needs to be arousable, consolable, and interactive to reassure us that there is nothing serious going on, that she is not "toxic".

Once it has been established that the child is not toxic, then look for other "clues" as to the source of the fever, i.e. cold symptoms (runny nose, cough, congestion, sneezing), gastrointestinal symptoms (abdominal pain, vomiting, diarrhea), sore throat, earache, etc. Often in children, there are no symptoms other than fever. Most of the

time, these kids have a viral illness, which may simply run its course (usually 3-5 days) without any other symptoms.

Fever itself is not dangerous unless it reaches 107°F or higher, which is rarely seen except in severe heat stroke -- almost never with an infection. It is true that about 10% of children under 7 years of age will have a seizure with fever. But this is related to the rate of rise of the fever not how high it is. Most of the time the parent doesn't even know their child has a fever before the seizure. Fortunately, although febrile seizures are frightening to the parent, they are rarely serious. It has never been demonstrated that we can prevent febrile seizures by aggressively treating the fever.

The key is not to focus on the fever. It is worthwhile to measure the temperature one time to document that there is a true fever. (Often kids feel warm to a parent's touch, but the temperature is normal. This is not a concern. There is no disease state associated with this). After that, put the thermometer away - it is not important whether the temp. is 101 or 104. The degree of the fever correlates poorly with the severity of the infection. If the child is uncomfortable with the fever (usually the case), feel free to treat the child with an antipyretic (fever reducer). Reducing the fever will not "mask" a serious illness, and if the fever is reduced, the child will likely drink better and act better, thus reassuring us that he is not "toxic". Do not be concerned, however, if the medicine does not decrease the fever - it has been clearly shown that the response to antipyretics is not indicative of the severity of the illness. Once a fever has been established, it is reasonable to measure the temperature once per day, to ascertain whether a fever is still present.

If the child is not uncomfortable due to the fever, do not give an antipyretic. Fever is one of the ways our bodies fight infection. Suppressing the fever may increase the duration of the illness.

Acetaminophen (Tylenol) or Ibuprofen (Motrin, Advil) are both effective at the proper dose (15mg./kg. every four hours for Acetaminophen, 10mg./kg. every six hours for Ibuprofen). Head-to-head, Ibuprofen appears to be slightly more effective than Acetaminophen. Although you will hear medical personnel recommending alternating the two medicines, I do not believe that this is a good idea. It is hard to coordinate an every four hour and an every six hour dosing, and many mistakes, leading to overdoses, have been made in this manner. Stick with one antipyretic and use it appropriately. Besides, the main point here is that Fever is Not the Enemy. We treat it to make the child comfortable, but the real concerns are as we discussed above. (Note -- Many cold medicines contain Acetaminophen, so combining Acetaminophen with a cold product can lead to an overdose of Acetaminophen. Always read labels to avoid this serious complication). (Also note -- Acetaminophen is the most common accidental medication poisoning in the U.S. This can lead to serious, even fatal, liver injury. Keep Acetaminophen, like all medicines, safely away from small children).

This discussion does not apply to the infant under three months of age. Although fever is not dangerous for this child either, a child under three months of age with a true fever (temp. greater than 100.5°F.) has a 20% chance of having a serious infection, and thus necessitates a call to the Pediatrician. Likewise, if a child greater than three months of age appears to be toxic, or the fever lasts more than 3-5 days, the Pediatrician should be called.

Colds

Colds are ubiquitous - everybody gets them. Because there are numerous viruses that cause colds, a child can get many colds in the same season. The usual symptoms are low-grade fever (99°-102°F.) for the first few days, sore throat, runny nose, sneezing, congestion, and cough. The runny nose usually starts out clear, then turns cloudy around day 4, then turns clear again around day 7. A cold may make a child slightly uncomfortable, slightly lethargic and cause a decrease in appetite. But, most kids will still be fairly active and still drink well. On average children get 6-12 colds per year. Parents often become concerned that their child is getting too many colds, and question if they have a problem with their immune system. Children who have true immune deficiencies are prone to recurrent serious infections, not colds.

Cold prevention is problematic, if not impossible. Avoiding other individuals with colds is effective, albeit rarely feasible. Frequent handwashing, keeping hands away from faces, and not sharing utensils or drinkware are all beneficial.

Cough is one of the most common reasons for a call to the Pediatrician. It makes the child uncomfortable, which makes the parents uncomfortable. Parents often focus on the nature of the cough (dry, wet, harsh, phlegmy, etc.,), but this is usually insignificant in determining the severity of the child's illness. The only accompanying symptom that should cause concern is difficulty breathing, particularly when the child is not in the middle of a coughing spell. If the child is breathing fast or hard for a prolonged period, the Pediatrician should be notified.

Cough often persists for 4-8 weeks, which drives parents crazy. This is due to inflammation of the airway, not the infection that initiated it, so these children are not contagious. As I have discussed in prior newsletters, cold and cough medicines are largely ineffective. Due to possible side-effects, they are no longer recommended in children under 6 years of age. Therapies that may make your child a little more comfortable include moisture in the air (vaporizer/humidifier, bathroom steam) and sipping beverages/sucking on lozenges (bathing the cough receptors in the back of the throat helps to decrease cough). Honey (for the child over 1 year of age) has also been shown to be mildly beneficial for cough. Salt-water (saline) nose drops with suction can help to ease congestion in the infant. You can make saline nose drops by mixing ¼ teaspoon of salt in 4 ounces of water. Heat it so it goes into solution, then let it cool -- Voila, saline nose drops. Vicks under the nose may offer relief from congestion, though it has no apparent benefit when rubbed on the chest.

In the child above 6 years of age, cough/cold medicines are still of questionable benefit, but have decreased risk. Pseudoephedrine is the most effective oral decongestant, but is now stored only behind the pharmacist's counter because of its role as an ingredient in the production of crystal meth, so you need to ask for it. Potential adverse effects include insomnia, headache, excitability, nervousness, decreased appetite, increased heart rate and blood pressure, arrhythmias, nausea and vomiting. Phenylephrine has replaced Pseudoephedrine in most OTC cold medicines. Numerous studies show it to be no more effective than placebo (The Medical Letter, Dec. 2015). Afrin nasal spray is effective in relieving congestion, but even when limited to 2-3 days, usage may still result in a "rebound" of nasal congestion when the Afrin is discontinued. Dextromethorphan is the most common OTC cough suppressant, but it is not very

effective. Delsym is a long acting form of Dextromethorphan that may be useful for night time cough. Previously, we would prescribe Codeine for the older child with a severe cough, but this is no longer recommended due to numerous reports of respiratory depression and death secondary to this therapy. Antibiotics have no role in treating the common cold, which is due to a virus, as they only treat bacterial infections. Echinacea, Vitamin C and Zinc have all been purported to help alleviate cold symptoms, but there is no good scientific evidence that this is true in children. Grandma's chicken soup (and actually, just Grandma) may provide the most comfort. "A cold will last seven days if you treat, one week if you don't." A good review of cold remedies can be found in the January, 2018 edition of Consumer Reports.

Frequently, a parent becomes concerned that their child's upper respiratory infection is a bacterial infection. This is usually due to a change to cloudy nasal discharge (though, as discussed, this is the norm around day 4) or the length of the symptoms. Most colds do last 7-10 days, and 2 weeks is not unusual. Cough may last 4-8 weeks, which is a frequent cause of concern. The typical bacterial upper respiratory infection (sinus infection) usually presents at the tail end of a cold. Symptoms include high fever, marked congestion, a large amount of thick yellow or green nasal discharge, and a significant worsening of the child's activity level and appetite. These symptoms should prompt a call to the Pediatrician, as sinus infections are amenable to antibiotic therapy.

FLU

Influenza, or the Flu, usually presents with the rapid onset of high fever, chills, and body aches. Other symptoms include sore throat, cough and vomiting. The symptoms of the Flu usually last for 7 days. The Flu almost always presents in epidemic fashion in the winter, not episodically throughout the year.

Diagnosis of Influenza is primarily based on clinical symptoms. Although rapid-testing is available, it is not very accurate, with a false-negative rate of 30%. Children consistently have the highest attack rates of Influenza. Kids younger than age 5, especially those under age 2, and kids with underlying medical conditions (most commonly asthma, neurologic disorder, and obesity) are at increased risk of hospitalization and complications from the Flu. Approximately 50% of children hospitalized for Influenza do not have an underlying condition.

Anti-Influenza medications, primarily Tamiflu, are available. Unfortunately, they are not very effective. Studies show that if Tamiflu is started within 48 hours of symptom onset, it can shorten the duration of the illness by 1 day (7 days to 6 days). Common side-effects of Tamiflu include nausea, vomiting, and headache. Tamiflu has also been associated with neuropsychiatric symptoms, including self-injury and delusion. Currently, Tamiflu is only recommended for high-risk individuals, including children under 5 years of age, and those with chronic conditions or obesity. It should be started within 48 hours of symptom onset. Tamiflu is recommended for prophylaxis for high-risk individuals who have been exposed to Flu who have not received Flu immunization.

A new anti-viral medication was approved 2 years ago, Xofluza. It is approved for patients 12 years and older. Its advantage is it only requires one dose, and it appears to have fewer side-effects than Tamiflu. Unfortunately, it is no more effective than Tamiflu, and also needs to be taken less than 48 hours after initiation of symptoms. For otherwise

healthy children age 5 and over, or any child with symptoms longer than 48 hours, symptomatic treatment is all that is appropriate (anti-pyretics, fluids).

Influenza vaccine is recommended for everyone age 6 months and older. Although it is our least effective vaccine, with average efficacy of 60%, it has been very safe, and 60% is better than 0% (for you math majors ☺).

SORE THROAT

In general, a sore throat (pharyngitis/tonsillitis) is due to either a virus or a bacteria. The usual bacteria that causes a sore throat is Streptococcus, or "strep". Viruses are responsible for 90% of sore throats, although in "strep season", March and April, strep may cause 50% of sore throats.

Often, a cold may start out as just a sore throat, and then on day 2 or 3 the child will develop a full-blown cold. Strep throat usually presents with a high fever, severe sore throat, bright red tonsils (often with pus) and large, swollen lymph nodes in the neck. It is often associated with a headache, abdominal pain and vomiting. Occasionally, strep throat will also be accompanied by a fine, pimply, "sand-paper-like" rash - this is called "Scarlet Fever". Although many years ago this was a more serious form of strep, today it does not represent a more severe illness. Strep throat primarily occurs in children age 5 – 15 years. It is rarely seen in children under 3 years of age.

Studies done over 40 years ago demonstrated that it was difficult to distinguish between viral pharyngitis and strep throat. Consequently, physicians have relied on throat cultures and rapid strep tests to make the correct diagnosis. However, these tests are very uncomfortable for most children, and their consequent lack of cooperation often results in an unsatisfactory throat swab, yielding an invalid test. In addition, 5% of the population will have a positive strep test, despite not having an active infection. I am now convinced with 30+ years of clinical experience, that basing treatment on my clinical judgement may be a better option than doing a throat swab. Although I will continue to do rapid strep tests under certain circumstances, I will be doing fewer of them going forward and basing treatment decisions on clinical criteria. (I hear the cheers from the extreme gaggers).

So, if your child has the symptoms of strep that I described, I will likely treat with antibiotics. However, if he/she has only had a sore throat for 1-2 days (which is commonly the prelude to a cold), or if your child has other viral symptoms (runny nose, congestion, sneezing, cough), this is likely a viral pharyngitis, and does not require antibiotic treatment.

There is no rush to treat a child with strep throat. Antibiotics initiated within 18 days of the onset of infection will prevent Rheumatic Fever, our chief concern with strep (although only 0.1% of cases of Strep throat result in Rheumatic Fever).

There is no treatment for a viral pharyngitis, just supportive measures such as pain relievers, Chloraseptic spray/lozenges (this contains Benzocaine, a local numbing agent – o.k. for kids over 6 years old) and fluids. Most viral sore throats last 3-5 days, though some, particularly those caused by Coxsackie virus (Hand-Foot-Mouth disease) last for 7 days.

PINK EYE

Pink eye, or conjunctivitis, is an infection of the conjunctival lining of the eye. This can be due to a virus or a bacteria. The primary way to assess the etiology (without doing a culture) is based on the amount of discharge from the eye. A viral conjunctivitis causes erythema (redness) of the inner lower eyelid and the sclera (the white part of the eyeball), but only causes minimal discharge (greater on awaking, then 3-4 times during the day). A bacterial conjunctivitis also causes erythema, but produces a large amount of discharge that accumulates constantly throughout the day.

The treatment for a viral conjunctivitis is simply warm compresses. The duration of symptoms is usually 7 days. Warm compresses are also beneficial for a bacterial conjunctivitis, especially first thing in the morning when the child's eyes are glued shut (which can be very frightening to a young child). Just let the warm washcloth soak on the eyelids for 5 minutes and the eyes will gradually open. In addition, we treat bacterial conjunctivitis with topical antibiotic drops, which will hasten the resolution of the infection (assuming you have six burly Bouncers to hold the child down while you administer the drops).

Pink eye is very contagious, which is why schools and day-cares often exclude children with pink eye. However, it is not serious or dangerous, and only mildly uncomfortable. Often, a facility will advise a parent that their child cannot come back until they are being treated, not realizing that there is no treatment for most of these kids. Many times, I have argued with school nurses and administrators concerning this issue, usually successfully. I do not believe children should be excluded due to a "cold in the eye", any more than they should be excluded due to a cold. This is also the official position of the American Academy of Pediatrics. The key to preventing transmission, as with so many illnesses, is washing the hands, either with soap and water or hand sanitizers, and avoiding touching other children's eyes.

GASTROENTERITIS

This is the final common illness that I will discuss. Typically, this starts with vomiting, which, fortunately, usually lasts less than 24 hours. The advice is to wait 2 hours from the last time the child vomited, and then begin sips of clear liquids (Pedialyte in the infant, any clear liquid in the older child) every 15 minutes. This is very labor intensive, as we wish to get a lot of fluid into the child, but only a little at a time. If the child vomits again, wait another 2 hours, and then start over. Gradually increase the volume as tolerated. If the child has a fever, feel free to treat this to make him/her comfortable.

Many children will also get diarrhea, usually on day 2 of the illness (some may only get diarrhea). The fluid treatment for this is the opposite of vomiting - large amounts infrequently. With diarrhea, every time the gut is challenged with something to digest, large or small, a bowel movement results. So, we try to rest the gut for hours at a time, but then challenge it with a large volume of fluid. No medications are recommended for acute diarrhea, as slowing down the intestinal motility may actually make the child sicker. We do use anti-motility agents in chronic diarrhea, but that is a different entity. Probiotics may also be useful for prolonged diarrhea, but have not proven effective for acute diarrhea.

The chief goal with gastroenteritis is to prevent dehydration. The signs of dehydration are: dry lips/mucous membranes, lack of production of tears with crying, lack of urination for an extended period of time, and extreme lethargy. The risk of dehydration depends on the age of the child and the severity of the vomiting and/or diarrhea, with younger children being more susceptible. This is particularly true if the child is refusing to drink. Obviously, if the child appears to be dehydrated, the Pediatrician should be notified. If the child has persistent vomiting or appears to be getting significantly dehydrated, he/she may require intravenous fluids. A recent change in the treatment of these children is administration of a potent anti-emetic, Ondansetron (Zofran). This has prevented many children from requiring intravenous fluids, but is used only in severe cases, due to potential side-effects.

Like most illnesses in children, gastroenteritis is usually viral, so antibiotics are not indicated. In fact, treating a viral gastroenteritis with an antibiotic can result in a very serious illness known as Hemolytic-Uremic Syndrome. If the diarrhea is bloody, this can indicate a bacterial etiology, and a stool culture should be considered.

Covid has dwarfed the discussion of all of our "usual" infections. But they are all still with us, still tormenting our children. Last Winter all of our Covid mitigation strategies dramatically decreased the incidence of these other illnesses, but that is not the case now with the relaxation of these efforts. So, stock up on fluids, anti-pyretics and chicken soup. Feel free to enjoy some Netflix and Wordle with your ill child, but don't forget the old standby, a good book!

Wishing you all a happy, healthy year.

Best Regards,

Scott Serbin, M.D.

P.S. – This issue's Back Page finds some humor in Covid. Too soon?

You know 10 years from now there is going to be a standardized test with a math problem that says "If Matt was exposed to Covid on Tuesday and had no symptoms four days later and he got it from Susie who caught it at a party three days before Matt and tested positive five days later, how likely is Matt's little brother going to test positive on an antigen test if he tests two days after Matt tests positive?