LECTURE: A stepwise approach to chronic diarrhea

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Chronic diarrhea (episodes lasting > 14 days) has a broad etiology and can require an invasive, cumbersome and expensive diagnostic approach that often is not needed.

Etiology shows an age-related pattern with commonest causes the celiac disease and post enteritis diarrhea. Food intolerance strikes infants and young children (mean age 25 +/- 25 months). Infections and allergies are also more common in later infancy and until 2 years of age whereas inflammatory diseases are more frequent in older children and adolescents. Celiac disease and chronic non specific diarrhea should always be considered independently on age, due to their high frequency. Regarding the pattern of etiology in chronic infectious diarrhea viruses are commonest causes in the developed countries while parasites and bacteria are more common triggering factors in the developing countries.

The DON'TS in the initial approach of the child with chronic diarrhea are: DON'T change diet, DON'T give drugs and DONT'T investigate functional diarrhea but WAIT for disease manifestations and APPLY diagnostic algorithms. The diagnostic approach should be based on stepwise algorithms that consider at first the age, the weight pattern and then the clinical and epidemiological factors, taking into account the results of microbiological investigations.

So in chronic diarrhea the first thing to do is weight assessment. If weight is not reduced and by using the ROME III diagnostic criteria we confirm functional diarrhea then no further investigation nor treatment is needed.

If the weight is reduced, or symptoms persist and parents are worried, then we need to investigate. The first diagnostic STEP includes non-invasive tests for infection (intestinal microbiology) and screening for celiac disease in which case histology is not always needed according to new ESPGHAN recommendations (consistent symptoms, 10 fold-increase of tTG IgA level, EMA- positive, HLA DQ2 e/o DQ8 positive). Also, depending on age, non-invasive tests for intestinal, pancreatic function and intestinal inflammation can be performed at this stage. Stool tests can provide useful information on intestinal function as for example the classical clinitest for carbohydrate malabsorption, elastase that measures pancreatic function and alpha-1 antitrypsin protein loss which also reflects intestinal permeability. Non-invasive assessment of digestive-absorptive functions (xylose load, dual sugar load, H2 breath test) and of intestinal inflammation (fecal calprotectin, fecal leucocytes, occult blood, NO) also have a key role in the diagnostic approach. Even though they do not provide an etiologic diagnosis these tests can give information on segmental localization, physiopathology and severity of illness and can be helpful in both guiding the biopsy and monitoring the illness progression.

If however we fail to have a diagnosis at this stage or there are alarm symptoms (such as gastrointestinal blood loss or nocturnal diarrhea) then we need to go up to step II and evaluate the intestinal morphology with endoscopy and biopsy. Other imaging studies include the last ileal loop ultrasonography for IBD and barium studies. If we still have not reached a diagnosis 2nd line imaging tests such as CT scan, scintigraphy or video capsule which can explore the part of the gut not reached by endoscopy can be performed.

Finally the STEP III, when necessary, would include special investigations to identify specific intestinal disease (such as intestinal immunohistochemistry, autoantibodies, SeHCAT measurement, brush border enzymatic activities, motility and electrophysiological studies).

In conclusion a stepwise approach allows to detect the etiology in the vast majority of CD patients. The diagnosis should be based on combined evaluation of clinical data and specific non-invasive tests and endoscopy should be driven by non-invasive tests in order to limit unnecessary procedures and reduce costs.

Reference:

The full stepwise diagnostic algorithm for chronic diarrhea is reported in the Chapter on Chronic diarrhea of the 19th Edition of the Nelson's Textbook of Pediatrics