CHRONIC DIARRHOEA OF INFANCY

Sanja Kolacek

Introduction

Not long ago adjectives such as chronic or persistent or protracted or intractable have been equivalently used to define diarrhoea lasting for more than 2 weeks, in an infant with less than 3 months of age, who is loosing or not gaining weight, and with stools that are negative for infective pathogens. This definition has been coined by Avery almost 40 years ago (1968) for a severe diarrhoeal illness of often undefined etiology, with a high mortality approaching 15% - 30%, mainly due to infection and malnutrition. However, in the last couple of decades the clinical picture and etiology have changed substantially. Therefore, the aim of this extended summary is to review the etiology and the pathogenesis of chronic diarrhoea starting in the first 6 months of life. Also, the up-to-date therapeutic approaches will be presented.

Definitions & etiology

A broad spectrum of different diarrhoeal diseases, initiated within the first 6 months of life, has recently been devided into two major categories: i. protracted / persistent and ii. intractable diarrhoea. In the first subtype are diseases which subside despite the initial severity, following an appropriate nutritional treatment, such as postenteritis syndrome, food protein senzitization, enzyme deficiencies, immune deficiencies, early coeliac disease, etc. In the second group diarrhoea persists for years, depite differents modes of nutritional and drug treatment, and therefore is today named as intractable diarrhoea of infancy. This second category is further devided according to the presence of small intestinal mucosal lession into two subtypes, the first one with mucosal atrophy caused by disease such as autoimmune enteropathy, epithelial dysplasia and microvillous inclusion disease, and the second one with normal mucosal finding embrassing conditions such transport defects and micronutrient defficiencies. In the table 1 different causes of protracted and intractable diarrhoea are
presented.

Intractable diarrhoea: pathogenesis & treatment

Diseases presently know under the name of «intractable diarrhoea» are developed either due to genetic defects in ion transport (Na/H & glucosa/galactosa malapsorption..) or in cell structure and metabolism (microvillous atrophy, epithelial dysplasia) or are due to immune hypeactivity and autoimmunity (autoimmune diarrhoea, IPEX syndrome..). Diarrhoea commonly develops soon after birth or in the first few months of life, and by pathophysiology is either secretory or a combination of secretory & osmotic. Patients with autoimmune pathogenesis may present with extradigestive

disorders such as diabetes, arthritis, thyroiditis, etc. Disorders are mostly life-treatening, have progressive course, and patients present with intestinal failure, requiring prolonged parenteral nutrition or are even candidates for intestinal transplantation. Those with autoimmune backgound may respond to steroids and/or massive immunosuppressive medications.

Protracted / persistent diarrhoea: pathogenesis & treatment

Protracted / persistent diarrhoea, defined by WHO in 1985 as diarrhoeal episode lasting for more than 2 weeks, and following mostly an infection-induced illness, has a complex pathogenesis. Despite initial acute episode, persistent diarrhoea is not caused by persistence of the micro-organism but is due to alteration in host factor(s) that render the children more susceptible to bacterial overgrowth and to other causes of malapsorption. Although causes may be very different a vicious cycle ensues, whereby malnutrition, immune defficiencies, food senzitization and bacterial overgrowth are common mechanisms, irrespective of the initiating factor However, the final common pathway probably involves self-perpetuating injury to the small intestinal mucosa, while the predisposing conditions are previous diarrhoeal episodes, malnutrition, poverty, formula and / or diluted cow's milk feeding practices. Concerning specific pathogens associated with persistent diarrhoea, the following are most commonly listed: enteropathogenic E.coli, enteroaggregating E. coli, Clostridium difficile, Giardia lamblia, Cryptosporidium parvum, Salmonella, Entamoeba histolytica. Protracted diarrhoea is primarily a nutritional disorder and, therefore, an appropriately chosen nutritional treatment is the mainstay of therapeutic approach. The current algorithm for nutritional treatment of infants with protracted diarrhoea is presented.

Recommended literature

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