

A Dialogue with Assistant Professor Hakim Rahmoune

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Abstract Here we are continuing interview articles and now Assistant Professor Hakim Rahmoune from Department of Paediatrics of Setif University Hospital & University of Setif-1 is questioned.

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Would you be so kind and could you please shortly introduce to the readers? Where are you born? Some information about your education and eventually some interest from this period?

I was born in 1978 in Constantine, the third largest city of Algeria. Constantine is a three-millennium city with a specific history in Eastern Algeria; It was formerly known as Cirta (Latin name), capital of Numidia and ancient fortress standing like an eyrie on a big rock, rebuilt and renamed by Constantin.

After a terrible earthquake, the rock split in two separate parts that are connected by several suspension bridges, making a pictorial framework of the city.

Interestingly, the first-ever discovery of the Plasmodium falciparum was made in Constantine by the French Nobel Prize of Medicine Dr Laveran who, in 1880, while working in the military hospital in Constantine, found the causative protozoan after observing the parasites in a blood smear taken from a patient dead of malaria.

That's my town, where my dear parents met in the early 1970's in the University of Constantine one of the most representative works of the famous Brazilian architect Oscar Niemeyer, the designer of the ultra-modern city Brasília.

In fact, my young parents were pioneers in this university: my father as a biologist, while my mother was teaching English Literature.

We were living simply and educated, my brother and I, with a mix of traditional and modern concepts; with a sharp vision of studies and research.

I was a frenetic philatelic fan and could spend hours with my Lego pieces...

I succeeded in my High School being the top ranked in the Baccalaureate exam in my favorite field: Mathematics.

Why did I change my mind and turned into medical studies? May be because my brother was already graduating in Medicine...

However, I liked pediatrics since my first contacts with children...perhaps due to the broad range of diseases ...or may be because of the joy of the whole family when you heal their frail relatives!

Where are you working and on what position? Some information about your daily routine job description?

After completing my residency in Montpellier (France) then in Constantine, I have passed what we call "civil service" in a medium size town for three years, in a secondary care specialized child & mother hospital where I was head of unit in the Pediatrics Department.

In 2013, I joined the University Hospital of Setif as a full-time pediatrician, and I was appointed as assistant professor in that hospital and in Setif-1 University since 2015.

I reach my work around 8 a.m. and I quickly check my couple of patients. At 8.30, I participate at the short briefing of the night or week-end shift with the medical team (interns, residents and the leading pediatrician) along with the head of the department. It lasts for about 30 – 45 minutes and we discuss diagnosis and management plans with our trainees, residents and interns, and set priorities for some special cases.

We have also a weekly bibliography activity, in which I participate once a month, presenting "what's new" in a dedicated topic; pediatric gastroenterology for me.

After the morning meeting, I lead the daily visit in my 10-bed unit of patients.

I also participate in practice-dedicated courses for undergraduate students as well as for interns and residents that are also regularly made inside our department.

I am also co-in charge of the outpatient pediatric gastroenterology clinic, every Tuesday; frequently with 1 or 2 residents in training.

I teach pediatrics and pediatric gastroenterology and give post-gradual training to residents in pediatrics, and I have been in charge of the University Pediatric Teaching Module for Undergraduate Students for 2 years.

When did you come directly in contact with celiac disease?

It was probably when I was a teenager: my cousin was admitted for a late-onset celiac disease. She was investigated for a severe malnutrition in a pediatric teaching hospital (the one in which I would be resident a couple of years after!)

I remember my mother explaining me how they excluded gluten from her diet to confirm the diagnosis: it was in the early 1990's when the ESPGHAN criteria were not modified yet...

How would you assess the changes in celiac disease by looking at the past period up to now, what has changed and what not?

The well-known Iceberg of the Celiac Disease, as initially proposed by Catassi with its different forms: symptomatic, silent and potential, is a major change in our approach of this peculiar autoimmune disease.

Thus, by using serology and even by looking to the genetic HLA background of the patient we can both exclude or classify the celiac sprue.

Despite the recent updated ESPGHAN guidelines that allow a "skip" of the former mandatory intestinal biopsy, we have to admit that the gold standard test to diagnose celiac disease remains the duodenal/jejunal mucosal changes according to the continuously updated classification of Marsh.

What was the most progressive and most important moment in the research of celiac disease and what are future research steps in celiac disease field?

One of the forgotten pediatrician that probably identified the CD three centuries before Dr Gee in England was Dr Gerónimo Soriano, an aragonese physician that published, in 1600, one of the first Spanish language books on pediatrics and in its Chapter II he states that there are different types of diarrhea, one of which is characteristic of "those which are celiac"!!

In the modern celiac disease timeline, a key moment was the identification of the pivotal enzyme Tissue Transglutaminase as a major player in the inflammatory and immunological cascade due to exposure to gluten in affected patients.

This discovery opened a great window of opportunity in diagnosis, follow-up and screening for celiac patients.

Shaping the future of gluten intolerance is widely depending on the results of the tremendous clinical and laboratory trials that focus on healing patients without the drastic gluten free diet.

It is an incredible odyssey and I personally expect at least one Trojan horse!

Would you be so kind and can you shortly describe the research results of your research in the celiac disease field, eventually say something about your current research in the celiac disease field?

As a member of our newly launched university-based research laboratory (genetic, nutritional and cardiovascular diseases laboratory), we focus on two major topics: the intestinal microbiota and its involvement in the development and progress of the celiac disease; and the immunogenetic aspects of the disease, mainly through the Human Leukocytes Antigens -HLA- genes and their potential impact on the clinical features of the disease.

In 2014-2015, Pr Nada Boutrid and I conducted a mass screening for short stature in Setif and nearly 2500 pupils were investigated: we had 47 short children and among these children, five had celiac disease. Unsurprisingly, more than one tenth of short pupils were in fact celiac.

In 2016-2017, we conducted a clinical-histology study of patients (pediatric and adult) admitted in the University Hospital of Setif.

About 31 to 40% of intestinal biopsies revealed an associated *Helicobacter pylori* and/or *Giardia lamblia* along with celiac sprue.

Whether this association has any immunological tie with the development of celiac autoimmunity is questionable. Do you think there are differences in the concept of disease between some countries and especially what is the situation in Algeria in the celiac disease field?

North Africa, especially Algeria, is a region historically considered as "the attic of Rome": Panem et Circenses (from Latin: "bread and circuses", the cynical formula of the Roman emperors for keeping the masses content with ample food and continuous entertainment.)

And do not forget that our famous traditional meal "couscous" is pure wheat!

In my opinion, we have a good Algerian expertise with CD, especially after the dramatic efforts and works of Pr Mohamed Touhami team in Oran in the 1980's and 1990's; their celiac cohort is encompassing more than a thousand of patients!

However, there is a shift in the last couple of years from the old concept of typical digestive CD to the expanding spectrum of presentations we are facing nowadays (i.e. latent and extra-digestive forms). This shift has been boosted by the local development of pediatric subspecialties such as pediatric gastroenterology and pediatric endocrinology.

Can you tell us something about differences in the prevalence and diagnosis of celiac disease in Middle East, comparing Europe and US?

At first, I wish to correct a big mistake often retrieved in the medical literature about CD prevalence in Algeria.

Pr C. Catassi reported the highest prevalence of CD in the world (> 5%) in Algeria, effectively, but in a non-Algerian population (Saharawi refugees in Tindouf, South-west of Algeria)

As previously mentioned, the team of Pr Touhami Oran (West of Algeria) reported the worldwide record prevalence of CD in diabetic patients: more than 16% according to their study published in *Acta Paediatrica* in the 1990's.

In sum, we have probably the same prevalence of CD in North Africa (about 1%) and may be with some phenotype differences due to a higher prevalence of consanguinity in our region.

Some information about celiac disease awareness in Algeria and other Middle East countries? Do have doctors enough information about celiac disease and is the gluten-free diet available for diagnosed patients?

Globally, there is a good compliance to ESPGHAN guidelines, while North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) or American Gastroenterology Association guidelines are less known by both pediatric and adult physicians.

We conducted an electronic multicentric survey last year (2018) about CD awareness across several teaching hospitals in Algeria, including interns and residents (mainly in internal medicine, gastroenterology and pediatrics). Results were stratified and most of interns and residents were considered as having a good knowledge of the disease, except in extra-digestive forms and in the curative aspect of the gluten free diet (10% and 40% of correct answers, respectively).

Regarding gluten free diet (GFD), I feel it is more and more available the last 20 years, especially through the development of local processing industry. This made GFD cheaper and easily accessible for most of the celiac population.

The problems we face in daily practice are mostly due to non-reimbursement (neither total nor partial) by medical insurance; while new regulations and laws regarding food packaging and GFD labelling are an appreciable step forward to better diet compliance.

How do you think the situation in the celiac disease filed will change in the near and possibly in to the distant future?

I think yes, we are facing a slow change in CD: there is more abundant literature about the tripod “Gluten, Genes and Gut microbiota”; while the growing Asian population that eat bread (wheat) in India and China may enhance our knowledge of the early immunogenetic origin and possible reversibility of the celiac autoimmunity.

Do you think that celiac disease will be one day fully curable and patients will don't need and not follow gluten-free diet?

Sure! If you have a glance at Clinical Trials website, you can get an exhaustive list of on-going trials of treatment alternatives.

I personally believe that “glutenase” is a good option, and I strongly trust in the power of the gastrointestinal microbiota; even if no evidence has emerged till now.

Weighing the actual scientific achievements, I think it is reasonable to expect a non-strict GFD in the near future; while a completely free diet might be a further dream...

So, wait and see!

I think that for readers will be interesting, what are your future objectives?

Our research laboratory is trying to get a network with other similar working groups to enhance our clinical impact as well as our basic-science knowledge of the disease, encompassing different specialties (pediatrics, gastroenterologists, histopathologists, internists, immunology & laboratory specialists, dieticians, ...etc.) and re-organizing the management into a patient-based holistic approach.

On the other hand, the first congress of our young Algerian Society of Pediatric Gastroenterology, Hepatology and Nutrition will be held in October 2019, and guess what? the main topic will be the Celiac Disease!

We modestly expect some interesting epidemiological and clinical findings from our local care facilities...and may be some metabolomics!

Personally, I have some projects about HLA genotype-phenotype correlation that I would be happy to share soon with IJCD readers...

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