ABSTRACT HABILITATION THESIS

FROM CLINICAL RESSEARCH TO STUDIES WITH POPULATIONAL IMPACT IN ENDOCRINOLOGY

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This habilitation thesis reflects my scientific, academic and professional activity after I have obtained the PhD with a thesis entitled "Clinical, morphological and immunohistochemical correlation in thyroid pathology", under the supervision of Prof Dr Totoianu Gh (National Ministry of Education – M.E.N. order nr. 4450 /2004).

My scientific activity was based from the very beginning of my medical career on two main research areas: Cervical pathology (thyroid and parathyroid) and Paediatric Endocrinology. I have published until now 20 articles in ISI journals with IF, with a cumulative impact factor of more than 9, five speciality books as first or unique author and another 4 as a co-author, one of them in a prestigious international publishing house. My publication list contains also 11 articles in B+/ BDI indexed journals, out of which 8 as main author and also 71 abstracts in ISSN/ISBN volumes (ISI journals), 15 of them as first author.

One of the main concerns in my activity was and still is the continuous urge for a multidisciplinary research with close collaboration with surgeons and/or pathologist. The last monograph – *Multidisciplinary approach of the thyroid nodule*- is the best example of this strategy. Thyroid nodules are found in 4–7% of the human population, although less than 7% of these lesions are malignant. I had a constant concern about screening for malignancy in thyroid nodules which is based mainly on fine-needle aspiration cytology in association with ultrasonography and clinical characteristics. In cervical pathology I have also preoccupations regarding the outcome of parathyroidectomy (total or subtotal) on clinical and paraclinical aspects or molecular implications in thyroid cancer but I was always prepared to describe rare cases that can bring us more information and understandings of some rare molecular pathways. In the future I want to focus in this area on *TERT* alterations that seem to constitute an early event in aggressive thyroid cancer. Reactivation of telomerase and presence of short telomeres have been found in a wide variety of human carcinomas but is not yet clear whether this represents just an epiphenomenon or play a key role in the process of carcinogenesis.

My first years in our University were at the Genetics Department and this experience has influenced entirely all my career. I was able to understand more deeply the genetic aspect of endocrine disorders. In these first years I was preoccupied with chromosomal abnormalities especially correlated with endocrine diseases. Thyroid dysfunctions in children with Down syndrome or translocation occurring in familial hypospadias are some examples.

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Later my preoccupations switch from rare diseases to more common ones like obesity. Many epidemiologic data provide the rationale for addressing the issue of childhood obesity prevention. One of our studies presents epidemiologic data on excess weight and underweight in the decade 2006–2015 with national representation for Romanian children aged 6–19 years. A large number of children (25,060) from 8 Romanian Counties were included in the analysis. Overall, according to the WHO reference, in Romania almost one in four children aged 6–19 years was overweight or obese between 2006 and 2015, comparable with those from other European countries, which includes Romania among the countries in which childhood obesity is at epidemic levels. I want to continue my research in this area and we have an internal grand in progress regarding the role of visfatin and RBP4 as a link between obesity and insulin resistance or the metabolic syndrome. We assumed that studies in children and adolescent populations could uncover the proper role of this adipokine in humans because they are relatively less influenced by the effects of accompanying diseases.

In the field of paediatric endocrinology I want also to continue the populational approach regarding the growth pattern of children from our country. The aim of one of our studies was to derive synthetic national growth references for the Romanian population. This approach has been proven cost-effective and in statistical agreement with the classical studies for constructing growth charts and has been used in countries where recent growth charts are not available. I intend to start more studies regarding the existing ethnic and maybe regional differences. As future directions, we might also consider comparing the new synthetic growth curves with the previously auxological data available and with the current recommended growth chart.

By accumulating more than twenty years experience in the field of Endocrinology and Genetics, I hope that this next step in my career will lead to continuous improvement of my practice through research. In my vision doing good research in medicine may require talent, work , flexibility but also the ability to see connections others may miss.

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