Many training and education online courses have been developed and held by H3Africa/H3AbioNet as IBT and eGenomic Medicine; They aimed to train different categories of trainees: Bioinformaticians, Data scientists, and Medical professionals on several Bioinformatics fields and related aspects. We can use such online platforms to design professional and specified courses for Medical Researchers.

Evaluation of nephroblastoma overexpressed gene, a transcriptional target of forkhead box protein O1 in type 2 diabetes mellitus

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Background: Type 2 diabetes mellitus (DM) is a chronic metabolic disease. The aim of this study was to evaluate the expression of FOXO1 and its target CCN3 in patients with type 2DM in a trial to explore the molecular mechanism underlying β cell failure and to correlate the relationship between the two gene expressions, to each other, to the different clinico-pathological factors and to complications of T2DM. Study design The expression of FOXO1 and CCN3 genes was evaluated by quantitative real time polymerase chain reaction (qPCR) in blood of 60 diabetics and 20 control.

Results: A high significant correlation was found between the studied groups regarding fold change of FOXO1 and CCN3 expression (P < 0.001). There was significant correlation between FOXO1 and CCN3 expression and many of the anthropometric measures or clinico-pathological factors among the studied groups.

Conclusion: The Results demonstrated the crucial role of FOXO1 and CCN3 in type 2 DM.

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Recent guidelines of metabolic surgery

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The accelerating pandemic of diabetes is recognized as one of the greatest global public health threats of our time. Given the microvascular and macrovascular complications associated with this disease, as well as the resulting morbidity and mortality, the personal, medical, and societal costs are enormous. In addition, despite continuing advances in diabetes pharmacotherapy, fewer than half of adults with type 2 diabetes mellitus (T2D) achieve therapeutic goals that would reduce long-term risks of complications. It is proved that in about half the cases medical care and lifestyle interventions are disappointing in the long term. In May 2016 a landmark consensus statement has been published in “Diabetes Care.” It incorporates Bariatric/Metabolic Surgery in the treatment algorithm of T2D.

Rubino et al. (8) reported new evidence-based guidelines for surgical treatment of T2D, writing on behalf of 48 voting delegates (75% are nonsurgeons) of the 2nd Diabetes Surgery Summit (DSS-II), an international consensus conference organized in collaboration with major diabetes organizations. These recommendations, endorsed thus far by 45 international professional societies reflect a large body of evidence demonstrating that several gastrointestinal (GI) operations initially designed to promote weight loss (bariatric surgery) can improve glucose homeostasis more effectively than any known pharmacological or behavioral approach, causing durable remission in many patients with T2D.

The new guidelines are formally recognized an unprecedented group of societies representing diverse medical and surgical specialties from around the world, these new guidelines can serve as a global reference for the use and study of GI surgery as an intentional treatment option for T2D (“metabolic surgery”).

The clinical relevance of noncoding RNA in colorectal cancer

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Background: The competing endogenous RNA plays a pivotal role in cancer. Novel proper strategies for early detection of colorectal cancer (CRC) are strongly needed.

Patients and Methods: We chose a CRC-specific RNA based biomarker panel based on the integration of differential 3 malignant brain tumor like 1 (L3MBTL1) gene expression with its selected epigenetic regulators using in silico data analysis. This was followed by RT-qPCR validation in serum of 70 patients with CRC, 40 patients with benign colorectal neoplasm infection and 40 healthy controls. Moreover, in ten of the 70 CRC cases involved in the study; we examined the expression of RNA based biomarker network in both CRC and adjacent non-tumor tissues and investigated their correlation with the serum level of this network.

Results: The 3 RNA based biomarker network [long non-coding intergenic RNA- (incRNA RP11-909B2.1), hsa- microRNA-595 (hsa-miRNA-595), and L3MBTL1], had high sensitivity and specificity for discriminating CRC from healthy controls and also from benign colorectal neoplasm. Among these 3 RNAs serum IncRNA RP11-909B2.1 is independent prognostic factors.

Conclusion: The circulating RNA based biomarker panel can act as a potential biomarker for CRC diagnosis and prognosis.

Key points:

The circulating transcriptome has been revealed as a novel class of non-invasive biomarker with high specificity and stability for early detection of CRC.

We proposed an integrative approach between differential L3MBTL1 gene expression with the selected epigenetic regulators. This approach has generated an interesting biomarker panel IncRNA RP11-909B2.1, hsa-miRNA-595, and L3MBTL1 mRNA) for CRC diagnosis and prognosis.

Role of microRNA-133 in rats with diabetic cardiovascular complications

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Background: Diabetes is one of the most common health problems globally with a serious impact on morbidity, mortality &