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Global Summit on PHYSIOLOGY AND METABOLISM OF THYROID

April 06-07, 2022 | Webinar

The Influence of H2-receptor Antagonist Administration to the 24-hours Uptake of I-131 in Thyroid Gland

Andreas Lim

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Hyperthyroidism and thyroid carcinoma are quite common in the world. In Indonesia, hyperthyroidism has a 6,9 % prevalence and according to GLOBOCAN 2018, thyroid carcinoma is the eleventh most prevalent carcinoma in Indonesia. Radioactive iodine (NaI-131) has been used as one of the option in hyperthyroidism and thyroid carcinoma management. NaI-131 can be administered orally. NaI-131 will enter the systemic after being absorbed at the intestine and then will be taken up by the thyroid gland and other organs those express Natrium-iodide symporter (NIS). H2-receptor antagonist (H2RAs) is a medication that often been given before administration of NaI-131. A predecessor study showed that H2RAs will prolong the gastric emptying time that could cause alteration of the NaI-131 biodistribution. The aim of this study is to determine the value and the difference in value of the 24-hours NaI-131 uptake in the thyroid gland pre- and post-H2RAs administration.

Methods: This study was a prospective study with quasi-experimental design pre- and post-intervention. Determination of the sample was done by non-probability sampling method with consecutive sampling technique. Subjects with normal fT4 level were selected based on inclusion-exclusion criteria. Those who fulfilled the inclusion criteria were administered 0,2 mCi of NaI-131 and then the uptake calculations were performed 24 hours later. The second uptake calculations were performed 30 days later. All of the subjects were asked to consumed H2RAs 1 hour before another 0,2 mCi of NaI-131 was given. The uptake calculations post-H2RAs were also performed at 24 hours. These calculations then were analysed.

Result: A total of 14 patients were enrolled in this study. Most of them were women (78%) with average age of 37,6 years old with range between 20 – 55 years old. This study showed a median of 24-hours uptake of NaI-131 on thyroid gland before and after H2-receptor antagonist were 20,6 and 16,7 respectively. The median percentage of the 24-hours NaI-131 uptake reduction after the administration of H2RAs was 22,4%.

Conclusion: H2-receptor antagonist decreased the 24-hour NaI-131 uptake on thyroid gland significantly.

Biography

Andreas Lim has completed his medical doctor from Pelita Harapan University, Tangerang, Indonesia in 2004, and residency in nuclear medicine from Universitas Padjadjaran, Bandung Indonesia in 2020. At the moment, he is working as a full timer nuclear medicine specialist at Indriati Hospital Solo Baru, Central Java, Indonesia. He has published 2 papers in reputed international journals and has been serving as a reviewer in a reputed national journal.

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Long-term disease recurrence in the adipose tissue and striated muscle of a mimally invasive papillary thyroid carcinoma.

Antonella Carbone

Endocrine Unit, Asm Matera, Italy

Statement of the problem: Differenziated thyroid carcinomas (DTC), particularly papillary thyroid carcinomas (PTCs), usually have an indolent behavior, howewer 10-20% of the patients develop recurrences, following surgery. There are several histological features associated with more frequent recurrences as the hystopathological variants of PTCs, the presence of vascular invasion or lymph node metastases and the presence of extrathyroidal extension (ETE). Case history: a 56yrs old male patient prevously treated for PTC, with excellent response to the first treatment, presented twelve years after a gradual increase of thyroglobulin (Tg) (from 0.3 to 0.76 ng/ml in 6 months) and a neck lump in the left cervical region at ultrasound imaging. Fine needle aspiration cytology of the mass and Tg measurement in the wash out liquid of the needle was 472 ug/l. Cytology revealed polymorphous epithelial cells with atypical nuclei suggesting metastasis of PTC. Surgery was then performed and pathology showed a massive metastasis in the local adipose tissue and striated muscles of the neck. Genetic analysis of the primary tumor and metastatic tissue revelead a BRAF p. V600E in both primary tumor and in metastatic tissue (37% and 48% respectively). Conclusions: Our patient's history suggests the need of a continuous and prolonged follow-up in patients with multiple features that increase the recurrence risk (minimal ETE, size >2 cm, BRAF V600E mutation as in our case).

Biography

Antonella Carbone is MD endocrinologist, with clinical experience in diagnosis and management of thyroid diseases. She studied in Naples ("L.Vanvitelli" University) and works from 2006 in Basilicata (South of italy) in the Endocrine Unit of Asm Matera with Rocco Bruno MD. The main field of interest is differentiated thyroid cancer . She is a member of Italian Thyroid Cancer Observatory (ITCO).

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Drugs used in regional block analgesia for thyroidectomy: a network meta-analysis of randomized controlled trials

Cao Zhe Xu
Hunan Province, China

Background: Postoperative pain has become one of the major obstacles to postoperative recovery and can lead to increasing demand for opioids. So far, a wide variety of drugs is used for regional block anesthesia, but which one is the best remains unclear. Thus, this study aims to obtain the best drug for thyroid surgery regional block based on their efficacy and side effects through Bayesian network meta-analysis.

Methods: Systemically searched MEDLINE, CENTRAL, Embase, and web of science on July 3, 2021 to obtain randomized controlled trials (RCTs) focusing on adults who underwent open thyroidectomy and regional blocks, and took opioids requirement, and the postoperative pain level as outcomes. The "Gemtc" package of R-4.1.1 was used for Bayesian network meta-analysis based on extracted data.

Results: We retrieved 398 articles, and finally included 31 RCTs, which included a total of 2221 patients. Patients received levobupivacaine had the lowest requirement rate for opioids and lowest pain score at T6 and T12. Non-steroidal anti-inflammatory drugs show significant superiority neither in the opioids requirement nor the pain score. Clonidine has a better potential to act as a qualified anesthetic adjuvant compared to adrenaline. The ranking results of the subgroup analysis were consistent with the integrated analysis.

Conclusion: Levobupivacaine has a relatively greater advantage in reducing opioids requirement and decreasing the pain score of patients, and bilateral superficial cervical plexus blockade and pre thyroidectomy intervention have more advantages than local wound infiltration and post thyroidectomy intervention in alleviating patients' pain.

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Novel TSH assays display highly significant correlation with symptoms of hypothyroidism as well as with adverse effects in patients under levothyroxine therapy

Catherine Ronin
SiaMed'Xpress, Spain

Work over the past decades has assigned changes in TSH glycosylation to the onset of hypothyroidism. However, most current assays fail to accurately measure such diseased forms of TSH and more than often, TSH level does not correlate with clinical signs of hypothyroidism. To achieve a better assessment of TSH level, we developed a glycoengineered calibrator mimicking highly sialylated TSH and screened antibodies accordingly to construct new assays. All assays showed harmonized TSH measurements (84 patients with TSH 2.1-22.4 mIU/L). Clinical validation of 4 of these new assays was carried out on a cohort of 1363 patients (18-85y) with TSH between 0.1 -63mIU/L without TRAK or anti-TPO antibodies. FT3, FT4 and 11 clinical signs of hypothyroidism were also recorded. New assays showed a positive correlation between TSH level and clinical signs in 797 healthy subjects according to gender (M/F) and age (<60y and >60y).A cohort of 253 patients under T4 treatment, with clinical symptoms and adverse effects was also studied. In untreated individuals, the ratio new assay/IRMA decreased as the number of major signs increased, indicating that each assay can bind a different set of TSH forms as the number of clinical signs increase. In T4-treated patients, 5 major hypothyroid signs were found to be reduced by T4 treatment and 3 adverse effects were increased while 26.3% of the patients did not present normal TSH values. TSH new assays may therefore serve as a therapy test to identify subclinical hypothyroidism, initiate and adjust hormonal treatment.

Biography

Catherine Ronin carried out a full academic career as Professor at Aix-Marseille University (France) and founded SiaMed'Xpress in 2010. She has published more than 35 papers related to TSH biological and immunological polymorphism in reputed journals and has been serving as expert, Vice Chair and Chair in Marie Curie ITN and JDP programs at the European, Research Agency over 12 years.

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Developing an Explainable Machine Learning Based – Thyroid Disease Prediction Model

Gyanendra Chaubey

Rajkiya Engineering College, Banda, India

Healthcare and medicine are key areas where machine learning algorithms are widely used. The medical decision support systems thus created are accurate enough; however, they suffer from the lack of transparency in decision making and shows a black box behavior. However, transparency and trust are significant in the field of health and medicine, and hence, a black box system is sub optimal in terms of widespread applicability and reach. Hence, the explainablility of the research makes the system reliable and understandable, thereby enhancing its social acceptability. The presented work explores a thyroid disease diagnosis system. SHAP, a popular method based on coalition game theory, is used for interpretability of results. The work explains the system behavior both locally and globally and shows how machine leaning can be used to ascertain the causality of the disease and support doctors to suggest the most effective treatment of the disease. The work not only demonstrates the results of machine learning algorithms but also explains related feature importance and model insights.

Biography

Gyanendra Chaubey has completed his Bachelors of Technology in Information Technology from Rajkiya Engineering College, Banda, India. He is working as Software Engineer in HCL Technologies, India and Data Science Coach in BoardInfinity, India. He has published 5 papers in reputed journals and conferences. His area of interest is Machine Learning, Deep Learning, Data Mining, and Artificial Intelligence.

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Prevalence of Iodine Deficiency Disorders among school going children residing in a hilly district of India

HIMASHREE BHATTACHARYYA
ALL India Institute of Medical Sciences, India

Iodine is one such micronutrient, the deficiency of which can impair the mental growth and development of young children and is the leading cause of preventable mental impairment. The present study has been conducted to study the prevalence of Iodine Deficiency Disorders and its association with various socio demographic variables among children (6-12 years) residing in East Khasi Hills district of Meghalaya. The sample size was 2700 with a multi stage 30 cluster sampling method. A questionnaire was used to collect data on the various socio demographic variables. Weight and height of each child was recorded as per the standard procedure. In order to assess goitre, children were examined as per standard procedures prescribed by National Iodine Deficiency Disorder Control Programme (NIDDCP). A total of 2700 children were interviewed in total. Out of these 1365(50.5%) were males. The total goitre rate was found to be 195 (7.22%) indicating that Iodine Deficiency Disorders is a mild public health problem in the study area. The median (IQR) UIE levels were 150 (108.05-189.37) μg/L. With respect to Weight for Age, it was observed that 93 (3.9%) children were severely underweight; 389 (16.8%) had severe stunting. A significant association was observed between goitre with the age group of children ($p<.00001$), maternal education ($p<.00001$), prevalence of stunting ($p<.00001$) as well as underweight ($p<.05$).

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Alveolar soft part sarcoma with CD68 expression

Neda Zarrin Khameh
Baylor College of Medicine, Texas, USA

A 24-year-old man presented to our hospital for evaluation of a 10-cm neck mass. Fine-needle aspiration and a core biopsy were performed, which was followed by tumor resection. The smears displayed numerous loosely cohesive or single large cells with abundant granular cytoplasm, round nuclei, vesicular chromatin, and occasional prominent nucleoli. Periodic and Schiff (PAS)-positive, diastase-resistant rhomboid, or needle-shaped crystals were present. Tumor cells had diffuse and strong nuclear TFE3 expression and aberrant cytoplasmic CD68 expression. Fluorescence in situ hybridization analysis was performed, which detected a characteristic translocation t(X;17)(p11;q25). The diagnosis of alveolar soft part sarcoma was rendered. Alveolar soft part sarcoma is a rare highly malignant neoplasm of the soft tissue and usually occurs in the lower extremities of children and young adults.

Biography

Dr. Neda Zarrin-Khameh is a pathologist in Houston, Texas and is affiliated with multiple hospitals in the area, including CHI St. Luke's Health-Patients Medical Center and Harris Health Ben Taub General, Quentin Mease and LBJ Hospitals. She received her medical degree from Tehran University of Medical Sciences School of Medicine and has been in practice for more than 20 years.

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IS THYROID EXCISION MANDATORY IN CARCINOMA LARYNX?

Pawan Singhal

SMS Medical College | India

Introduction: Total or ipsilateral hemithyroidectomy or isthmectomy are performed along with total laryngectomy in many cases. The need for performance of thyroidectomy during Total Laryngectomy is controversial.

Aims & Objectives: This study examines preoperative clinical, radiological and histopathologic characteristics that can be used to predict thyroid gland invasion in the setting of squamous cell carcinoma (SCC) of theLarynx.

Method: A cross sectional observational study set out to review preoperative clinical assessment, radiological and histopathological findings, and follow-up data.

Results: 11 (15.94%) out of 69 patients had thyroid gland involvement with mean age 63.4 years. 90.9% patients with thyroid gland involvement were male. 9 cases with thyroid gland involvement were staged as T4a preoperatively. Out of 11 cases of histopathologically proven thyroid gland involvement, 8(72.72%) underwent primary total laryngectomy.

Conclusions: Invasion of thyroid glandby laryngeal cancer is rare. Unnecessary hemithyroidectomies lead to hypothyroidism and hypoparathyroidism. The study points out the clear indications of thyroid excision in patients undergoing total laryngectomy. This can save the patients from the brunt of unnecessary morbid hypothyroidism and hypoparathyroidism

Biography

Dr Pawan Singhal did his MBBS from JLN Medical College, Ajmer, Rajasthan, INDIA and his post graduation from SMS Medical College, Jaipur, INDIA. He is among only a few ENT surgeons in Rajasthan who have been awarded gold medal (Dr G. Narayanan) in PG nexams. He was the first ENT surgeon in Rajasthan to earn DNB(Diplomate National Board) degree.He was awarded with the prestigious International visiting scholarship award by American Academy of Otorhinolaryngology and Head Neck Surgery in annual meeting at San Francisco on September 2011 for training at Memorial Sloan Kettering Cancer center, New York.

Thyroid Cancer, Radioactive iodine and Female Fertility

Sandra Rocher

Reina Sofia Hospital, Murcia, Spain

Radioactive iodine (I131) is used after surgery in the treatment of Differentiated Thyroid Carcinoma (DTC). There is no solid evidence about the potential deleterious effect of I131 on women fertility. The objective of this study is to assess the impact that I131 may have on fertility in women. All women followed by DTC in our department have been analyzed and women younger than 45 years old at the time of diagnosis and initial treatment were included. There were 40 women exposed to I131 (study group) and 11 women who were only treated with thyroidectomy (control group). Of the women exposed to I131, 40% went through early menopause, while no cases were reported among their controls. Furthermore, 29.2% of women exposed to I131 had decreased Antimüllerian Hormone (AMH), compared to the only 11% of unexposed women (not significant). Regarding the fertility impairment "perceived" by patients, in the group of women exposed to iodine, 17.9% described being unable to complete their genesic desire whereas, none was registered in the control group. We conclude that radioactive iodine can affect a woman's fertility and shorten her reproductive life, so this is an aspect that should be taken into consideration.

Biography

Sandra Rocher has completed her Medicine Degree at the age of 24 years at Valencia University. Nowadays she is coursing the Gynecology and Obstetrics Residency in Reina Sofia Hospital and Virgen de la Arrixaca Hospital.She has published more than 25 posters in reputed international conferences and recently she has published a research article in Nature Scietific Reports Journal. Currently she is working in more research proyects in the area of Gynecological endocrinology.