HSPI The Open Access Publisher

J R O JOURNAL OF RADIOLOGY AND ONCOLOGY
ISSN 2573-7724

Letter to Editor

"Thyroid": Letter to the Editor, Radioactive Iodine: A Living History

Barbara Hertz*

6 Buckthorne Lane Greenwich, CT 06830, USA

Abstract

The history of the origin of the medical uses of Radioiodine (RAI) has been compromised by false narratives as recently as June 2023 in the "Thyroid "article "Radioactive Iodine: A Living History". Primary sources document Dr. Saul Hertz (1905 - 1950) as solely conceiving of the medical uses of RAI, being the first and foremost to develop the experimental data, bringing RAI from bench to bedside, and extending the use of radionuclides to diagnose and/or treat cancer and other conditions. Dr Hertz predicted and worked toward conquering cancer with other radionuclides. Saul Hertz overcame the racism of his time, a world war interrupting his first clinical study, a strong pushback from the surgeons, and unethical medical publishing practices. Today, Nuclear Medicine, Radiopharmacy, Medical Physics, and other specialties are collaborating and actively building on Saul Hertz's enduring foundational work.

More Information

***Address for correspondence:** Barbara Hertz, M.Ed., 6 Buckthorne Lane Greenwich, CT 06830, USA, Email: htziev@aol.com

Submitted: February 14, 2024
Approved: March 06, 2024
Published: March 07, 2024

How to cite this article: Hertz B. "Thyroid": Letter to the Editor, Radioactive Iodine: A Living History. J Radiol Oncol. 2024; 8: 001-002.

DOI: 10.29328/journal.jro.1001058

Keywords: Nuclear medicine; Theranostics; Oncology

Abbreviations: Isotopes: I-128: Iodine-128; I-131: Iodine-131; RAI: Radioactive Iodine; RAI: Radioiodine

Other abbreviations/acronyms: Dr., MD., Ph.D., MS., MGH, MIT, SNMMI

Check for updates

OPEN ACCESS

To the Editor

History is an ongoing process of describing, analyzing, evaluating, and interpreting past events that are continually revisited as new evidence comes to light. Thank you to Drs Daniels and Ross for their *Thyroid* article, "Radioactive Iodine-A Living History" [1]. There are omissions of attribution of Dr Saul Hertz's foundational work regarding the origin and medical uses of RAI.

New evidence, based on information from primary sources is now available from the Dr. Saul Hertz Archives. Saul Hertz solely and spontaneously conceived as well as posed the pivotal question that began the RAI research. Massachusetts General Hospital (MGH)'s Dr. James Means' letter to the Markle Foundation stated, "…when it became apparent that there might be radioactive isotopes of iodine, it at once occurred to Hertz that we might make use of them to solve a problem we were already working on". We now have lab notebooks and correspondence to verify that Hertz's Massachusetts Institute of Technology, (MIT) collaborator, Arthur Roberts, Ph.D. produced the non-cyclotron Iodine -128 (I-128) [2].

The Harvard Crimson May 24, 1949 is online. The headline reads, "Hertz to Use Nuclear Fission in Cure for Cancer". Dr Hertz stressed the tracer, targeted approach. He supported the production of Iodine -131(I-131) off of the atomic piles which lowered the cost and increased the RAI distribution. Hertz envisioned,"...the goiter treatment by means of radioactive iodine...represents a 'first' in hopefully a long series of definitive treatments". Hertz predicted, "…my new research is in Cancer of the Thyroid, which I believe holds the key to the larger problem of Cancer in general" [2,3].

Today, we have the perspective of more than eight decades of success. The principles of using RAI as a diagnostic tool, RAI for uptake testing, and Dr Hertz's use of dosimetry are essential features of Dr. Hertz's precision-targeted approach that have all endured. Recently, Sergio Calvo, President of Jubilant Radiopharma, wrote to President Biden." We are proud to bring American patients a therapy (RAI) that yields 98% 10-year survival in thyroid cancer based on the early work of Dr. Saul Hertz…" [4]. The treatment landscape for iodine-resistant thyroid cancer is changing rapidly with many new targets, therapeutics, clinical trials, and approved treatments. Saul Hertz fostered the integration of the sciences, using RAI as a biomarker, the use of dosimetry, and most importantly using radioactive pharmaceuticals as targeted precision medicine [5].

Bennett Greenspan, MD, MS, 2017 - 2018, President of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), Michael S. Hofman, MD., Australia's Peter Mac Cancer Center's eminent researcher and practitioner in

diagnosing and treating prostate cancer and John Buscombe, MD., former editor of The World Journal of Nuclear Medicine, together published a commentary that details the historical mistakes and truths [6].

Saul Hertz was challenged by the pushback of the surgeons who were the money producers of the hospital. Questionable ethics in medical publications impeded his progress. For sure, as an outsider, he was confronted with strict quotas and restrictions. A world war interrupted his clinical study. Dr Hertz overcame these deterrents to bring his paradigm-changing work to fruition. Indeed, as MGH, President David F. Brown announced in his remarks at the installation of the American Chemical Society's, Dr Saul Hertz and The Medical Uses of Radioiodine, in October 2021," Dr Hertz carried out experiments with results that would forever change medicine" [7].

Conclusion

Dr Saul Hertz (1905 - 1950) is the originator of the medical uses of Radioiodine (RAI). RAI, the first theranostic is the cornerstone of Nuclear Medicine. In his short life of forty-five years, Dr Hertz overcame many challenges to revolutionize modern medicine.

References

1. Daniels GH, Ross DS. Radioactive Iodine: A Living History. Thyroid. 2023 Jun;33(6):666-673. doi: 10.1089/thy.2022.0344. PMID: 37307104.
2. Hertz B. Hertz S. (1905–1950) Discovers the Medical Uses of Radioactive Iodine: The First Targeted Cancer Therapy. Thyroid Cancer - Advances in Diagnosis and Therapy. InTech; 2016. DOI: 10.5772/64609
3. Hertz B, Watabe T, Baum RP. Celebrating 80 years anniversary of radioiodine for use in thyroid cancer and perspectives for theranostics. Ann Nucl Med. 2022 Dec;36(12):1007-1009. doi: 10.1007/s12149-022-01806-9. Epub 2022 Nov 8. PMID: 36346502.
4. Hertz S. Archives. Greenwich, CT 06830 assessed February 27,2024.
5. Fullmer T, Cabanillas ME, Zafereo M. Novel Therapeutics in Radioactive Iodine-Resistant Thyroid Cancer. Front. Endocrinol. Sec. Thyroid Endocrinology. 15 July 2021; 12. https://doi.org/10.3389/fendo.2021.720723
6. Greenspan BS, Hofman MS, Buscombe J. Commentary on "Radioactive Iodine: A Living History". J Nucl Med. 2024 Mar 1;65(3):495. doi: 10.2967/jnumed.123.267016. PMID: 38176715.
7. Hospital MG. Honoring the Legacy of Saul Hertz and the Medical Uses of Radioiodine. 2021. https://www.massgeneral.org/news/hotline/honoring-the-legacy-of-sau-hertz-and-the-medical-uses-of-radioiodine