

International Atomic Energy Agency Scientific Forum

A Decade of Action on **Cancer Control** and the Way Forward



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

17–18 September 2019
Vienna International Centre
Board Room D, C Building, 4th Floor

Regional collaboration:
China's experience in thyroid cancer
management

Yan-Song Lin

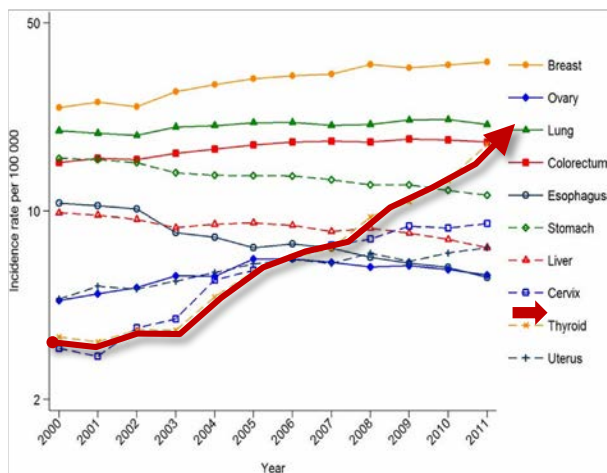
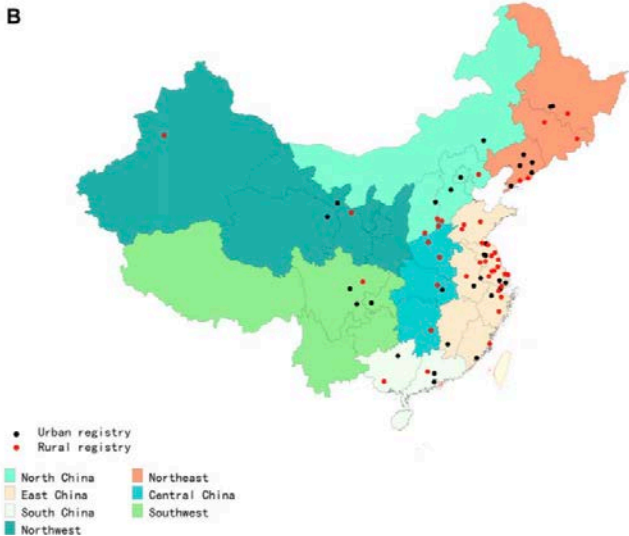
Professor and Associate Director of Department of Nuclear Medicine, Peking Union Medical College Hospital, China



Chinese Society of Clinical Oncology
Beijing Xisike Clinical Oncology Research Foundation



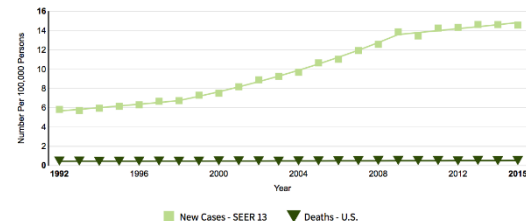
Thyroid cancer in China: Increasing incidence with unpromising survival



At a Glance

Estimated New Cases in 2018	53,990
% of All New Cancer Cases	3.1%
Estimated Deaths in 2018	2,060
% of All Cancer Deaths	0.3%

Percent Surviving 5 Years	98.1%
	2008-2014



Modeled trend lines were calculated from the underlyine rates using the Joinpoint Trend Analysis Software.

➤ Same increasing increasing incidence as US and worldwide

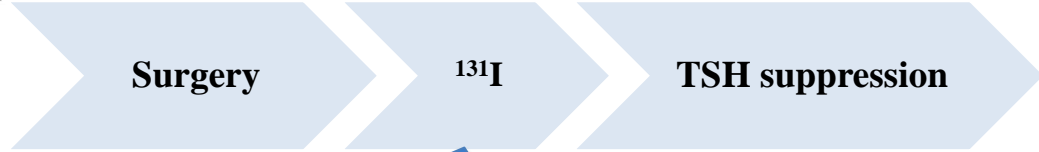
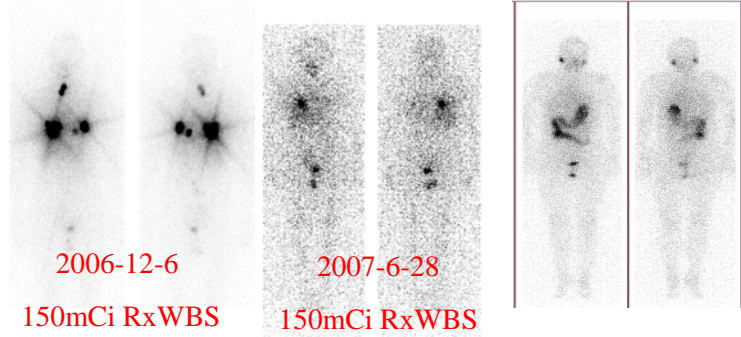
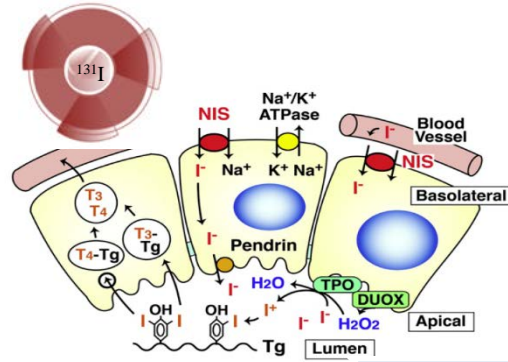
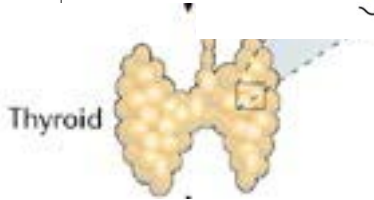
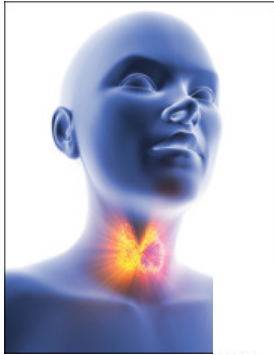
2008: China vs US: 73.9% vs 97.93%^{3, 4}

➤ Incidence : 6.79 /100,000¹

➤ New cases 194232/567233 (34%)²



Features of the differentiated thyroid cancer (DTC accounts for 90% of thyroid cancer) allows the use of radionuclide in management of DTC



Started at 1950s in China



Influence of IAEA in the management of thyroid cancer in China

- RAS 6043/RAS 6047/RAS 6074/RAS 6083
- Training course, Workshop, Scientific visitors greatly updated our knowledge about the standards of IAEA and trends of management of thyroid cancer worldwide.



Workshop on Leadership Skills for Emerging Challenges in Nuclear Medicine (Nov. 2018, IAEA)
– held in conjunction with the IAEA Ministerial Conference

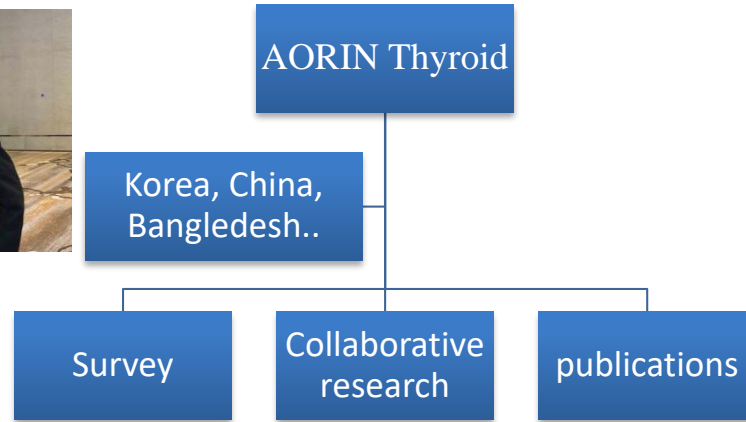
Final Workshop of RAS 6083 (Dec. 2018, SIN)

Expert Mission to CPR, Oct. 2016.



International Collaboration: Formed the Thyroid Study Group Project of the Asia Oceania Research Initiative Network, (AORIN) under the help of IAEA

Friendship/Guidance /Self- promotion/Partner and Academic coordination



Clinical and Translational Imaging (2019) 7:209–217
<https://doi.org/10.1007/s40336-019-0025-4>

EXPERT REVIEW

Role of thyroglobulin in the management of patients with differentiated thyroid cancer

Seong Young Kwon¹ · Yingjie Zhang² · Yansong Lin³ · Byeong-Cheol Ahn⁴ · Hee-Seung Bom¹

Received: 28 March 2019 / Accepted: 29 April 2019 / Published online: 15 May 2019
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Original article

Clinico-social factors to choose radioactive iodine dose in differentiated thyroid cancer patients: an Asian survey
Zeenat Jabin^{5*}, Seong Young Kwon^{6*}, Hee-Seung Bom⁶, Yansong Lin⁶, Ke Yang⁷, Anri Inaki⁸, Ayu Rosemeilia Dewi⁹, Akram N. Al-Ibraheem¹, Batool Al Balooch¹⁰ and Teofilo O.L. San Luis Jr¹¹; for the Thyroid Study Group of the Asia Oceania Research Initiative Network (AORIN)



Domestic collaborations

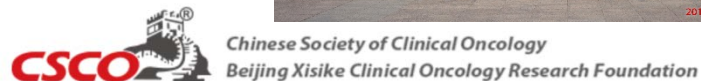
Friendship/Guidance /Self- promotion/Partner and Academic coordination



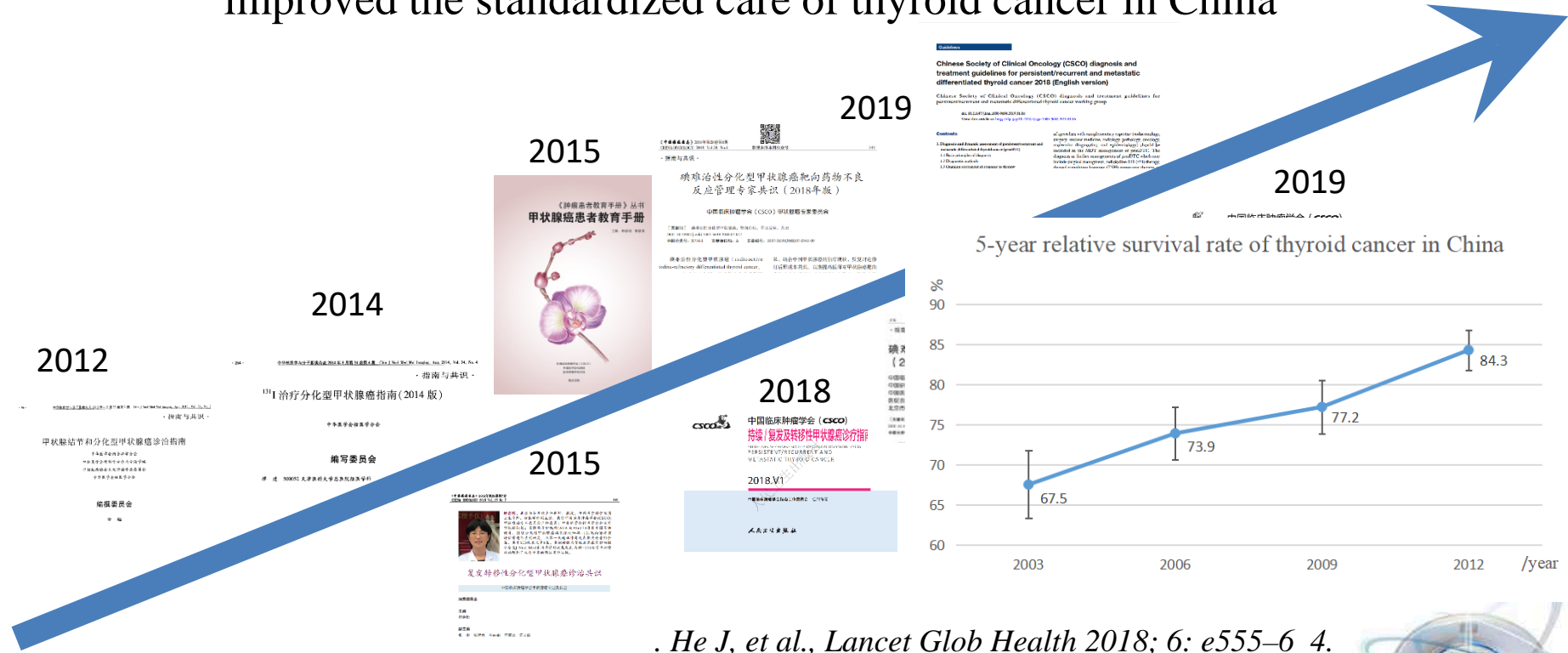
中国临床肿瘤学会甲状腺癌专业委员会“走进锡林郭勒”甲状腺规范化诊治学术会议



Thyroid cancer



Consensus/guidelines/pamphlets by relative Chinese associations –greatly improved the standardized care of thyroid cancer in China



2012

甲状腺结节和分化型甲状腺癌诊治指南

中华医学会内分泌学分会
甲状腺学组

编写委员会

主编 王卫华

2014

131I治疗分化型甲状腺癌指南(2014版)

中华医学会核医学分会
甲状腺学组

编写委员会

主编 王卫华

2015

《肿瘤患者教育手册》丛书
甲状腺癌患者教育手册

中国抗癌协会
甲状腺癌专业委员会

主编 王卫华

2015

复发转移性分化型甲状腺癌诊治共识

中国抗癌协会
甲状腺癌专业委员会

主编 王卫华

2019

Chinese Society of Clinical Oncology (CSCO) diagnosis and treatment guidelines for persistent/recurrent and metastatic differentiated thyroid cancer 2018 (English version)

Chinese Society of Clinical Oncology (CSCO) diagnosis and treatment guidelines for persistent/recurrent and metastatic differentiated thyroid cancer working group

主编 王卫华

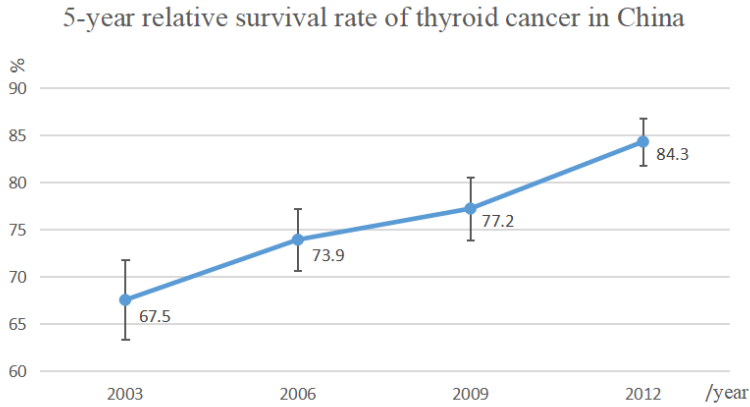
2018

中国临床肿瘤学会 (CSCO)
持续/复发及转移性甲状腺癌诊疗指南

2018.V1

人民卫生出版社

2019

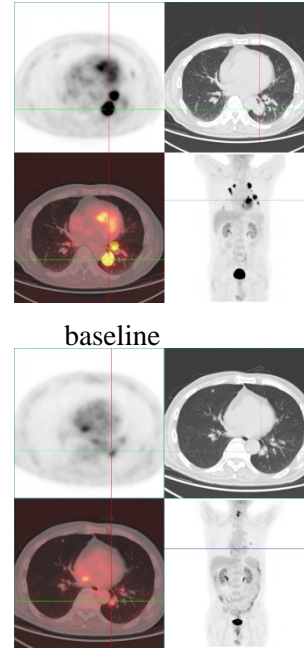
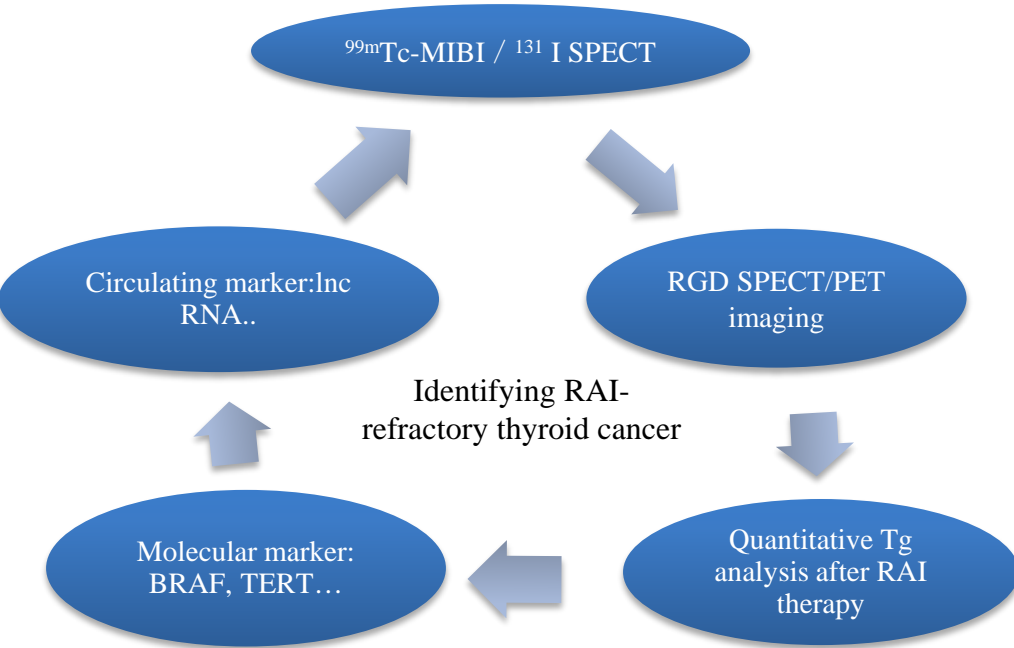


. He J, et al., Lancet Glob Health 2018; 6: e555–6 4.



Recent advances:

- 1) Early identifying RAI-refractory thyroid cancer
- 2) Exploring safe, effective, more affordable drug for Chinese RAI-Refractory- thyroid cancer patients



56days after apatinib (750mg qd po)

CLINICAL RESEARCH ARTICLES

Pilot Dose Comparison of Apatinib in Chinese Patients With Progressive Radioiodine-Refractory Differentiated Thyroid Cancer

Xin Zhang,^{1,2} Chen Wang,^{1,2} and Yansong Lin^{1,3}

¹Department of Nuclear Medicine, Beijing Shoude College (P.R.M.C) Hospital, Chinese Academy of Medical Science & P.M.C, Beijing 102730, China; and ²Beijing Key Laboratory of Metastatic Tumor Diagnosis and Therapy in Nuclear Medicine, Beijing 102730, China

Context: Apatinib has shown overwhelming efficacy in progressive radioiodine-refractory differentiated thyroid cancer.

Endocrine-Related Cancer | Cheng J, Zhang et al. | 2017 | 265 | 433-443

RESEARCH

PET response assessment in apatinib-treated radioactive iodine-refractory thyroid cancer

Chen Wang^{1,2}, Xin Zhang^{1,2}, Bao Yuan¹, Mei Lij¹, Baihui Cui¹, Wenzhen Guo¹, Xia Li¹, Zhongkai Zhu¹ and Yansong Lin^{1,3}

¹Department of Nuclear Medicine, Beijing Shoude College Hospital, Beijing, China; ²Beijing Key Laboratory of Metastatic Tumor Diagnosis and Therapy in Nuclear Medicine, Beijing, China; ³Department of Oncology, The Affiliated Hospital of Qinghai University, Qinghai, China; ⁴Department of Endocrinology, Beijing Shoude College Hospital, Beijing, China; ⁵Department of Nuclear Medicine, Beijing Shoude College Hospital, Beijing, China

Correspondence should be addressed to Y. Lin; Email: lyin@shoude.edu.cn

© Wang and Zhang 2017. Published online by Cambridge University Press

www.oxfordjournals.org/advance-publication/ | **Oxford Journals** | Advance Publications 2017

Overwhelming rapid metabolic and structural response to apatinib in radioiodine refractory differentiated thyroid cancer

Yansong Lin¹, Chen Wang^{1,2}, Wen Gao¹, Rufu Xue Cui¹, Jun Liang¹

¹Department of Nuclear Medicine, Beijing Shoude College Hospital, Beijing 102730, China; ²Department of Oncology, The Affiliated Hospital of Qinghai University, Qinghai, China; ³Department of Endocrinology, Beijing Shoude College Hospital, Beijing 102730, China

These authors have contributed equally to this work.

Correspondence to: Yansong Lin; Email: lyin@shoude.edu.cn

Keywords: apatinib, radioiodine refractory differentiated thyroid cancer, PET response, metastatic differentiated thyroid cancer, safety



Regional collaboration: China's guidance in thyroid cancer management among Asian area



Combining of IAEA activity with China National project:
Regional training course on the use of Nuclear Medicine
in management of thyroid disease

Expert mission of RAS6083 Pakistan

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<https://doi.org/10.1007/s12016-019-0025-4>

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Batool Al Baloosh^g and Teofilo O.L. San Luis Jr^h; for the Thyroid Study
Group of the Asia Oceania Research Initiative Network (AORIN)

Nuclear
Medicine
Communications

Develop E-learning materials:

- Evaluation before RAI treatment
- Early identification of RAI-refractory thyroid cancer
- Management of advanced thyroid cancer

Collaborative research papers



Summary

- Huge patients base of thyroid cancer accounts for 1/3 of the the annual new cases worldwide with unpromising surviving status .
- With the guidance of IAEA RAS programme /regional cooperation, we gain partners and academic cooperative platform.
- Both the standardized care and management of advanced thyroid cancer had been improved over the recent 10 years in China.
- Activities aim at minimizing the academic imbalance between urban and rural area, promoting the public education of thyroid cancer knowledge, remain on the way.
- Meanwhile, China is eager to be involved in academic cooperation and taking the responsibility in guidance of management of thyroid cancer among Asian-Oceania.
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