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JRS Round Table Discussion "Diagnostic Imaging, What For?" 2005.04.09. 12.20-13.50
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Dr. Potchen

Preventive

Imageology( )

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Preventive Imageology- A New Paradigm of Secondary Prevention

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1. What is Preventive Imageology?
Definition:
Methods of Secondary Prevention of Diseases by means of Imaging Technology
2. Background of this study
(1)Japan approaches a Society of Old Age and Number of Children becomes small.
(2)Recent Developments of High-grade, Non-invasive Whole-Body Screening Devices
(3)Desire of Japanese People to Better Preventive Care of Lifestyle-Related Diseases
(4)Saving of National Medical Expenditure by Shifting to Preventive Medicine
3. Objective of this study
(1)Simultaneous Detection of Multi-organ and Multi-disease in One-Stop Test
(2)Detection of Changes of the Above Information with Age

4. Proposed Imaging Modalities
(1) Low Dose Whole-Body CT
(2)Whole-Body PET/CT
(3)Whole-Body, High-Field MRI

5. Target Diseases to be Detected
Lifestyle-Related Disease：
Cancer, Heart Disease , Neurovascular Disease, Bone Disease(Osteoporosis)
Visceral Fat Obesity leading to Diabetes

6.Proposed Strategy(1) for Secondary Prevention
(1)Subject: All Japanese, Healthy Men and Women
(2)40 Years Old – Baseline Image
(3)If no Abnormal Findings, 5 Year Interval Screening is recommended
  until 60 years Old, From 60 years old, 3 Year Interval Screening
(4)Comparison of Recent Image with Baseline Image

7. Proposed Strategy(2) for Secondary Prevention
(1)Images of Each Individual are stored as Medical Certificate of Digital Format.
(2)Each Individual should possess the Images as a National Health Insurance Certificate.
  In Japan, All Persons are already covered by National Health Insurance.
(3)All Medical Facilities including Private Clinic will have a Display Device
  by which Images are to be Diagnosed.

8. Nobel Technology to be Developed
(1) Remote Image Diagnosis for Consultation by Specialist
(2) Computer Assisted Diagnosis(CAD) for Whole-Body Image.
(3) Fast and Comprehensive Network for Medical Information Exchange throughout
  Japan

9. Innovation for Japanese National Health Insurance System(1)
(1)All Japanese People are already covered by National Health Insurance.
(2) However, Health Insurances do not pay for Preventive Medicine at present.
(3) Health Insurance System should be changed to cover Primary
  and Secondary Prevention.

10. Innovation for Japanese National Health Insurance System(2)
(1)Health Insurance should subsidize an Expenditure for Imaging of Secondary
  Prevention.
(2)If a Person does not undergo Imaging Procedure intentionally, Insurance
  Compensation-Rate may be reduced when the Person will have Illness.
(3) If Primary and Secondary Preventive Practice prevail throughout Japan.
  Total Medical Cost may be decreased.

11. Future Investigations for Implementation of the New Paradigm
(1) Pilot Test by a Selected Group of 10,000 persons
(2) Accuracy of Disease Detection and Its Stage Distribution
(3) Estimation of Adverse Effect of Screening Test
(4) Rough Calculation of Cost-Effectiveness

12. An Example of Imaging Device: Low Dose Lung Screening CT
It can detect following Life-style Related Diseases
(1)Lung Cancer: Main Target
(2)Coronary Artery Calcification
(3)Early Detection of Pulmonary Emphysema
(4)Osteoporosis for Women
(5)Detection of Visceral Fat Obesity

13. Concluding Remarks

In Japan, we try to establish a New Strategy for Primary and Secondary Prevention in order to cope with The Old-Age Society.

Nobel Imaging Methods will play an Important Role in Secondary Prevention.

Radiology and Radiologists are Key Components of this New Paradigm