Patient Characterization and Cohorts

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Rob Beanlands Disclosure Information

The following relationships exist:

R*esearch grant support*

MDS Nordion

GE Healthcare

Lantheus Medical Imaging

Consultant

Jubilant Draximage

Lantheus Medical Imaging

Professional

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UOHI is a manufacturer of PET radiopharmaceuticals

Clinical Medicine is Phenotyping

EVIDENCE BASED MEDICINE: Population Effect (e.g. Randomized Clinical Trial) may ≠ individual patient response.

ART of MEDICINE – individualized care based on experience - with phenotype characterization
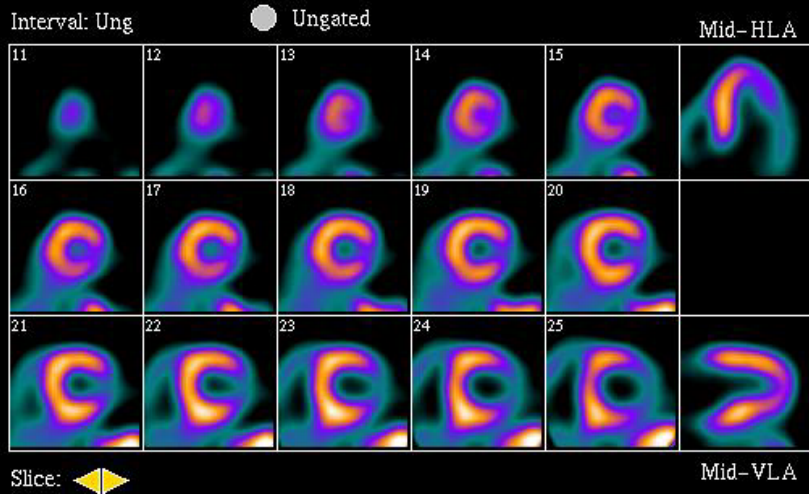

Sir William Osler (1849-1919) at the bedside:
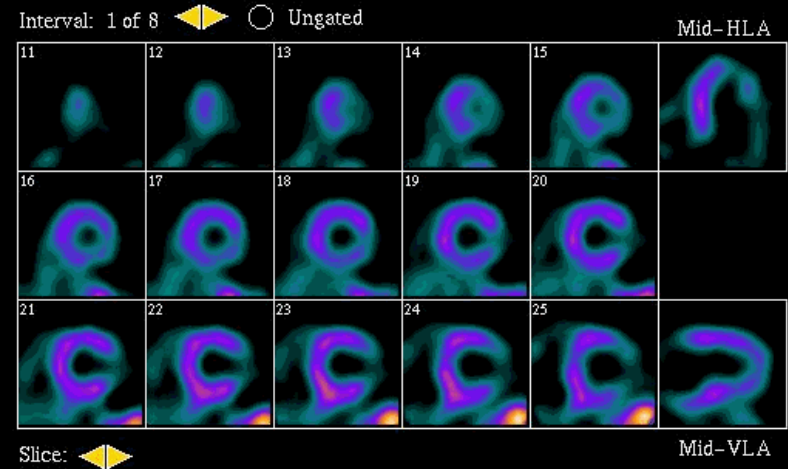
inspection, palpation, auscultation, contemplation.

Bliss, M. William Osler. A Life in Medicine. Univ. of Toronto Press, 1999

⁸²Rb PET/CT Perfusion Imaging
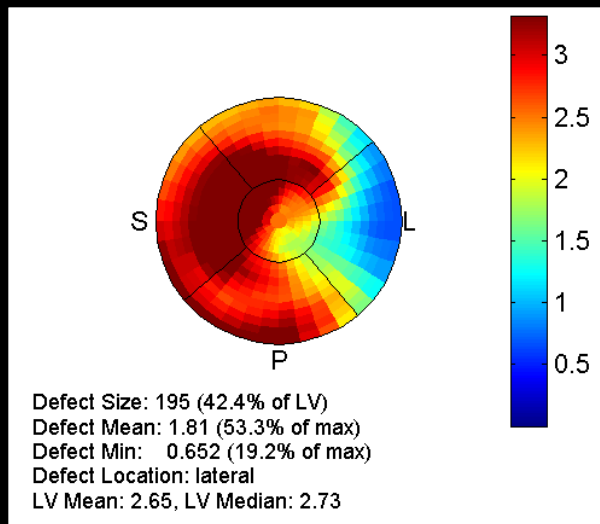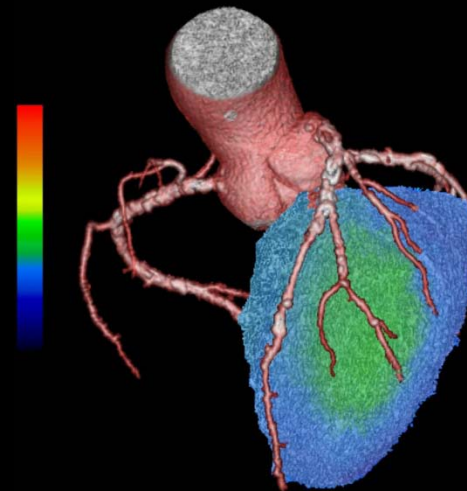
STATIC: S-R MPI Reversibility

GATED: S-R LVEF Reserve

DYNAMIC: MBF S/R Reserve

FUSION with CTA anatomy

- **Understand disease**

- **Detect disease**

- **Determine prognosis – stratify risk**

- **Direct therapy & prevention**

- **Aid development/evaluation of new strategies**

What is Needed?

Comparative Effectiveness Research

Well powered studies – does a biomarker/phenotype characterization impact outcome, symptoms, QoL, costs?

Better understand marker-disease relationships

Links to disease progression; Rx response; outcomes

More true Translation:

Not just talking about it --- doing it !

Standardization – SOPs, ethics

How?

**Translational framework**

Training

Core Facilities

Collaborative Teams Networks:

- **James Hogg iCAPTURE Centre, the PROOF Centre**
- **The National Lung Health Framework**
- **IMAging Guided Evaluation of Heart Failure (IMAGE HF)**
- **Canadian Atherosclerosis Imaging Network (CAIN)**
- **Medical Imaging Trials Network of Canada (MITNeC)**
- ***Molecular Imaging Network (MINet)***
- ***Vascular Network***

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the <u>most adaptable</u> to change."

"In the long history of humankind (and animal kind, too) those who <u>learned to collaborate</u> and improvise most effectively have prevailed"

Charles Darwin

1809-1882
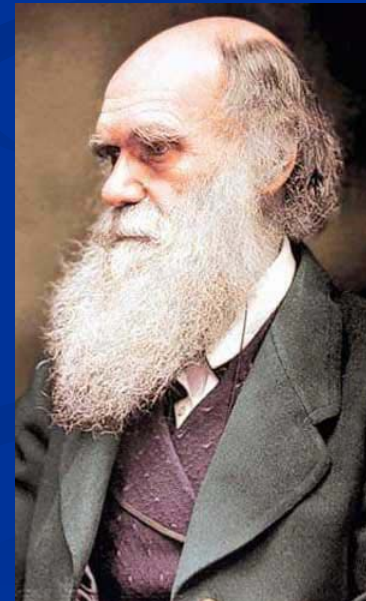
Essential considerations in patient and cohort characterization

*Session Chair: Rob Beanlands, Director, Molecular Functioning and Imaging, University of Ottawa Heart Institute (***CAN***)*

>> Essential ingredients for phenotyping

Peter Watson, *Professor, Pathology and Lab. Medicine,* **UBC⁄BC Cancer Agency's Vancouver Island Centre (CAN***)*

>> "Workable" ethics for translational research?

Ma'n Zawati, *Academic Associate, Centre of Genomics and Policy, McGill University (***CAN***)*

>> Engagement of patient cohorts for better medicines, faster

Ramesh K. Ramanathan, *Medical Director, Tgen Clinical Research Services (***USA***)*