Treating Liver Cancer with SIR-Spheres® Microspheres: An introduction

Dr. David N. Cade
Global Medical Director
Sirtex

Sydney, 18th July 2012

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An illustrated atlas...
In very general terms, the main categories of treatment available for human cancers include...

1. Surgery  
   “remove it”

2. Chemotherapy  
   “poison it”

3. Radiotherapy  
   “irradiate it”

4. Biologic therapies (in more recent times)  
   “interrupt it”
But for liver cancer, the situation has historically been...

- Surgery
- Chemotherapy
- Radiotherapy

Because...
- Normal liver tissue is sensitive to radiation
- Organs near the liver are sensitive to radiation

Therefore...
- Liver cancer patients have missed out on a highly effective cancer treatment option
When liver cancers grow, they develop their own blood supply...
SIR-Spheres microspheres are placed into the blood supply to the liver cancers...
And deliver radiation therapy directly to the liver cancer, while minimizing damage to the normal tissue.
Referral patterns...
The Medical Oncologist commonly acts as a liver cancer patient’s “air traffic controller”

Common referral model in public hospital practice

- Medical oncologist
- Multi-disciplinary team
  - Comprises all cancer specialties
  - Decides optimal course of treatment

GP → Medical oncologist → Multi-disciplinary team

- Liver surgeon
- Medical oncologist
- Radiation oncologist
- Interventional radiologist

Service provision as required

Common referral model in private practice

GP → Medical oncologist → Multi-disciplinary team

- Liver surgeon
- Radiation oncologist
- Interventional radiologist

Service provision as required
Thank you
Metastatic and Primary Liver Tumours: An Emerging Role for Selective Internal Radiation Therapy (SIRT)

A/Prof Peter Gibbs
MBBS, FRACP, MD
Consultant Medical Oncologist
Royal Melbourne Hospital
Overview of the talk

1. Introduction
2. The changing landscape of metastatic CRC
3. Overview of key SIRT data
4. Challenges to integrating SIRT into routine practice
5. The future of SIRT will be data driven
1. Introduction
Who am I?

• Consultant Medical Oncologist
  – Treat cancer with chemotherapy, biologics, hormonal therapy
  – Sub-specialty interest in gastrointestinal cancer, i.e. cancers of the intestines, bowel, pancreas etc.

• Research interests
  – Global Lead Investigator on soon to be completed SIRFLOX randomised controlled trial of SIR-Spheres
  – Other clinical trials
  – Translational research – personalised medicine
    • Ludwig Institute Cancer Research in Parkville
What do Medical Oncologists do?

• Multi-disciplinary treatment of cancer

• Different disciplines have a lead role at different times
  – Surgical oncology
    • Primarily at diagnosis, remove primary tumour
  – Medical oncology
    • Additional treatment after initial surgery (adjuvant Rx)
    • Treatment of patients with advanced cancer
    • Follow the patient and tend to be the gatekeeper

– Radiation oncology
– Interventional radiology

Service provision as required
A little bit about the Royal Melbourne Hospital

- Tertiary referral and academic teaching hospital, affiliation with the University of Melbourne
- Part of the Parkville Precinct
  - Ludwig Institute
  - Walter and Eliza Hall Institute
  - University of Melbourne
  - Royal Women’s Hospital
  - (2015 - Peter McCallum Cancer Centre – Victorian CCC)

- First SIRT patient treated in 2002
  - Spectacular response, remains alive and in remission
  - (Second patient didn’t do so well….)
  - Experience now of over 100 patients – Learning curve +++
2. The changing landscape of metastatic colorectal cancer
Metastatic colorectal cancer = bowel cancer

• A disease of Western society
  – High fat, red meat, alcohol,… obesity, lack of exercise, etc.
  – Increasing rapidly in Asian countries as Western lifestyle adopted

• Worldwide
  – 1 million cases per year
  – 500,000 deaths per year

• Liver = commonest site of metastatic disease
  – 40% of cases - only site of initial progression
  – 20% of cases - only site of disease at death

• Multiple treatment options
  – Surgery
  – Chemotherapy, biologics
  – Liver directed therapy
Median overall survival in “first-line” metastatic CRC: Established benchmarks

- **Best supportive care**: ~6-8 months
- **5FU/LV**: 12-14 months
- **IFL or FOLFIRI**: 14-21.5 months
- **5FU/LV + bevacizumab**: 18.3 months
- **FOLFOX or XELOX**: 15-21.2 months
- **FOLFOX / XELOX + bevacizumab**: 21.3-26.1 months
- **FOLFOX6 → FOLFIRI**: 20.6 months
- **FOLFOXIRI**: 23.4 months
- **FOLFIRI + cetuximab in KRAS<sup>wt</sup>**: 23.5 months
3. Overview of key SIRT data
Previous studies of SIRT were relevant to the 1990’s metastatic CRC treatment paradigm

Liver-only or liver-predominant metastatic CRC

First-line 5FU +/- SIRT

Best supportive care

SIRT
First randomised controlled trial: Liver directed chemotherapy *versus* liver directed chemotherapy + SIRT

**70 “first-line” patients (Australia)**

<table>
<thead>
<tr>
<th>Study design</th>
<th>N = 70 patients</th>
<th>Time to liver progression</th>
<th>Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver directed chemotherapy</td>
<td>34 LDC alone</td>
<td>9.7 months</td>
<td>1 yr: 68%, 2 yr: 29%, 3 yr: 6%</td>
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<tr>
<td>or</td>
<td></td>
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</tr>
<tr>
<td>Liver directed chemotherapy + SIRT</td>
<td>36 LDC + SIRT</td>
<td>15.9 months</td>
<td>1 yr: 72%, 2 yr: 39%, 3 yr: 17%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>P = 0.001</td>
</tr>
</tbody>
</table>

### Second randomised controlled trial: Systemic chemotherapy versus systemic chemotherapy + SIRT

21 “first-line” patients (Australia)

<table>
<thead>
<tr>
<th>Study design</th>
<th>Response rate</th>
<th>Time to progression</th>
<th>Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic 5FU/LV chemotherapy</td>
<td>0 / 10 = 0%</td>
<td>3.6 months</td>
<td>12.8 months</td>
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<tr>
<td>or</td>
<td></td>
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</tr>
<tr>
<td>Systemic 5FU/LV chemotherapy + SIRT</td>
<td>8 / 11 = 73%</td>
<td>18.6 months</td>
<td>29.4 months</td>
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<tr>
<td></td>
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<td>P &lt; 0.005</td>
<td>P = 0.02</td>
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Third randomised controlled trial: Systemic chemotherapy *versus* systemic chemotherapy + SIRT

44 “last-line” i.e. “salvage” patients (Belgium)

<table>
<thead>
<tr>
<th>Study design</th>
<th>N = 44 patients</th>
<th>Time to liver progression</th>
<th>Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic 5FU chemotherapy</td>
<td>23 5FU alone</td>
<td>2.1 months</td>
<td>7.3 months*</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Systemic 5FU chemotherapy +</td>
<td>21 5FU + SIRT</td>
<td>5.5 months</td>
<td>10.0 months*</td>
</tr>
<tr>
<td>SIRT</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

P = 0.003  
HR = 0.38

P = 0.80  
HR = 0.92

* Note: 10 patients in the 5FU alone arm received SIR-Spheres as salvage therapy after disease progression

Current options for integrating SIRT into routine practice for metastatic CRC

1. Liver-only or liver-predominant mCRC
   - 1st-line chemotherapy
     - +/- biologic
     - + SIRT
   - 2nd-line chemotherapy
     - +/- biologic
     - + SIRT
   - 3rd-line therapy
     - + SIRT
   - Chemo-refractory
     - Clinical trial of new drug
     - SIRT
   - Surgical resection is tumour resectable?
     - 10–20%
     - <20%
     - +/- biologic
     - + SIRT
   - SIRT

- Requires data from SIRFLOX / FOXFIRE
- ? For K-RAS mutant patient population
- ? Justifiable clinical practice
- Salvage use: current evidence is compelling

4. Challenges to integrating SIRT into routine clinical practice

- Clinician biases
  - Medical oncologist
  - Hepatic surgeons
- Accessibility
- Perceived lack of clinical data
Factors impacting on SIRT use

1. Historical

2. SIRT is not a drug
   - Can’t simply be added to the drug chart e.g. Avastin or Erbitux
   - Takes time to organise (interventional radiology, nuclear medicine)

3. Unique toxicity profile

4. Perceived lack of clinical data
Therapeutic goods regulations: Australian law

OBJECT establish & maintain a national system of controls relating to the quality, safety, efficacy & timely availability of therapeutic goods

1. Used in Australia
2. Exported from Australia

GOODS which are represented to be, or are likely to be, taken for a therapeutic use

Means used in connection with preventing, diagnosing, curing or alleviating a disease or influencing or modifying a physiological process in humans or animals

Therapeutic Goods Act 1989

Therapeutic Goods (chemotherapy agents) (biologic agents)

Medical Devices (SIR-Spheres)

Therapeutic Use
The drug development process extends over many phases, unlike for medical devices.

**Pre-clinical studies**
- CHEMISTRY: Search for active substance
- PHARMACOLOGY: Toxicology, studies of effects on various species of animals

**Clinical trials**
- **PHASE I**: IND* - Processing by the authorities
  - Studies of effects on healthy human subjects
  - 50-100 persons
- **PHASE II**: Clinical studies on limited number of patients
  - 100-200 persons
- **PHASE III**: Comparative studies on large number of patients
  - 500-5,000 persons
- **PHASE IV**: Post-Marketing Studies etc.

**Level of knowledge**
- Investigational New Drug Application for permission to administer a new drug to a human
- New Drug Application Application for permission to market a new drug

**Time**
- 2-4 years
- 2-6 months
- 3-6 years
- 1-3 years

4. Challenges to integrating SIRT into routine clinical practice...
Factors impacting on the use of SIRT

1. Historical  
   Problem solved with large phase III trial data

2. SIRT is not a drug
   – Can’t simply be added to the drug chart e.g. Avastin or Erbitux
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Factors impacting on the use of SIRT

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4. Perceived lack of clinical data
4. Challenges to integrating SIRT into routine clinical practice…

Clinic family with SIRT and how to access it

- SIRT is not a drug, so for infrequent / non-users
  - Unfamiliar with patient selection *(which patients to treat?)*
  - Unfamiliar with SIRT data *(can’t discuss practical aspects, potential risks and benefits with patient, c.f. Avastin or Erbitux)*
  - Unfamiliar with procedures for referring patients for SIRT *(which colleague do I refer my patient to?)*
  - Reluctant to refer to a colleague *(might lose business)*

*Problem solved* by developing centres of excellence

- Provide a “one stop shop” of interventional radiology and nuclear medicine expertise
- Patients referred back to treating medical oncologist
- Similar to current referral for standard radiation therapy
Factors impacting on the use of SIRT

1. Historical

2. SIRT is not a drug
   - Can’t simply be added to the drug chart e.g. Avastin or Erbitux
   - Takes time to organise (interventional radiology, nuclear medicine)

3. Unique toxicity profile

4. Perceived lack of clinical data
Clinician unfamiliarity with safety and toxicity of SIRT

- **Unique toxicity profile**
  - **SIR-Spheres**
    - Stomach ulcers: ~5%
    - Radiation injury to liver: 2 – 5%
  - **Chemotherapy**
    - Neutropenia: 54%
    - Peripheral neuropathy: 18%
    - Diarrhoea: 14%
  - **Avastin**
    - Bleeding: 1 – 5%
    - Gastro-intestinal perforation: ~2%

Problem solved by data that demonstrates the risk of not giving SIRT is greater than the risk of giving SIRT

Problem solved by higher volume centres of excellence with low toxicity rates

Reference: Sirtex data on file, oxaliplatin prescribing information, Avsatin prescribing information.
Factors impacting on the use of SIRT

1. Historical

2. SIRT is not a drug
   - Can’t simply be added to the drug chart e.g. Avastin or Erbitux
   - Takes time to organise (interventional radiology, nuclear medicine)

3. Unique toxicity profile

4. Perceived lack of clinical data
Oncologists require Level 1 evidence from randomised controlled trials (RCTs)

<table>
<thead>
<tr>
<th>Chemotherapy RCTs</th>
<th>SIRT RCTs</th>
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<tbody>
<tr>
<td>• Many RCTs completed (10s – 100s)</td>
<td>• Three RCTs completed</td>
</tr>
<tr>
<td>• Usually <strong>big trials</strong>, recruiting 500+ patients</td>
<td>• Small trials - recruited 74, 21 &amp; 44 patients</td>
</tr>
<tr>
<td>• Compare new chemotherapy drugs <strong>versus current “gold standard”</strong> chemotherapy regimen</td>
<td>• Compare SIRT <strong>versus old chemotherapy</strong> regimens, no longer clinically relevant</td>
</tr>
<tr>
<td>• Usually <strong>international, multi-centre</strong> RCTs</td>
<td>• Two RCTs performed in Perth, only one RCT international, multi-centre</td>
</tr>
<tr>
<td>• Usually set out to demonstrate overall survival (<strong>OS</strong>) advantage</td>
<td>• Three RCTs primarily demonstrated time to progression (<strong>TTP</strong>) advantage, a surrogate of <strong>OS</strong></td>
</tr>
</tbody>
</table>

**Level 1 evidence currently available**

**Level 1 evidence not currently available**
5. The future of SIRT will be data driven
Our early results with SIRT at Royal Melbourne were of considerable interest...

Radioembolization in Combination with Systemic Chemotherapy as First-line Therapy for Liver Metastases from Colorectal Cancer

Suzanne Kosmider, MBBS, Thean T. Tan, MBBS, Desmond Yip, MBBS, Richard Dowling, MBBS, BMedSc, Meir Lichtenstein, MBBS, and Peter Gibbs, MD

**Results:** Overall response rate according to the Response Evaluation Criteria in Solid Tumors was 84% (two complete responses and 14 partial responses). Median progression-free survival (PFS) time was 10.4 months and median overall survival (OS) time was 29.4 months. For patients with disease confined to the liver, PFS improved (10.7 mo vs 3.6 mo; \( P = .09 \)), with significant prolongation of OS (median, 37.8 mo vs 13.4 mo; \( P = .03 \)) compared with those who had EHD. Nine patients, including three long-term (> 3 y) survivors, remained alive after a median follow-up of 18.6 months. Serious treatment-related toxicities included febrile neutropenia with concurrent FOLFOX treatment, a perforated duodenal ulcer, and one death from hepatic toxicity.

**Conclusions:** The present findings confirm the effectiveness of RE plus systemic chemotherapy for metastatic CRC. Patients with liver-confined disease derived the greatest benefit, with median survival times beyond 36 months. Larger datasets from ongoing phase III trials are needed to further define the safety and efficacy of RE in the first-line setting.

- 85% response rate
- Median PFS 10.4 months
- Median OS 29.4 months
- Median OS 37.8 months for patients with liver only disease
- Three long-term (> 3 years) survivors

**Conclusion:** Large RCTs are needed to further define safety and efficacy of SIRT

...but our group concluded that our early results should be further defined in a large randomised controlled trial.

SIRFLOX study design

Eligible Patients:

- Unresectable liver-only or liver-predominant colorectal cancer metastases
- No prior chemotherapy for advanced disease
- Fit for combination therapy and selective internal radiation therapy (SIRT)

Schema:

- **SIR-Spheres® microspheres**
- **FOLFOX6m* ± bevacizumab**
- **FOLFOX6m* ± bevacizumab**

Stratify:
- Presence of extra-hepatic metastases
- Degree of liver involvement
- Institution
- Use of bevacizumab

Randomise 1:1 n = 450

* SIR-Spheres microspheres implanted day 3–4 of Cycle 1
* oxaliplatin administered at 60 mg/m² for Cycles 1–3 in the SIR-Spheres microspheres + FOLFOX arm
* at the investigator’s discretion, bevacizumab may commence at Cycle 4 in the test arm and at Cycle 1 (or per institutional protocol) in the control arm
SIRFLOX is an international multi-centre randomised controlled trial in Australia, Europe, USA (N = 450)

- Primary study end-point
  - Progression-free survival (PFS)

- Secondary study end-points
  - **Overall survival (OS)**
  - Tumour response rate (liver and any site)
  - Tumour recurrence rate (liver and any site)
  - Quality of life
  - Surgical resection rate
What would it take to see major use of SIRT in first-line treatment i.e. standard of care?

• **“Maybe”**
  1. SIRFLOX demonstrates an improvement in progression free survival of $\geq 3$ months

• **“Definitely”**
  1. SIRFLOX demonstrates an increased rate of hepatic resection
     • ?Increased use in borderline resectable cases only
  2. SIRFLOX demonstrates an overall survival advantage

5. The future of SIRT will be data driven…
What would it take to see increased use of SIRT in the chemo-refractory (salvage) setting?

• “Definitely”

1. Future studies demonstrate an overall survival advantage
   • Unlikely that such studies will be done
   • Goal posts will continue to move

2. Increased accessibility and use of SIRT elsewhere
   1. Increased uptake in other tumours e.g., Hepatocellular carcinoma
   2. Increased first-line use in colorectal
Attrition in number of patients with mCRC receiving each subsequent line of chemotherapy or other treatments

e.g. 100 patients with unresectable mCRC

1st-line chemo
- 85% receive chemotherapy
- 15% receive no further chemotherapy

2nd-line chemo
- 75% of patients receive chemotherapy
- 25% receive no further chemotherapy

3rd-line chemo
- 25% of patients receive chemotherapy
- 75% receive no further chemotherapy

Salvage therapies e.g. SIRT

Questions?
SIR-Spheres® microspheres: Targeted radiation therapy for the treatment of liver cancer

A/Prof Lourens Bester
Head of Interventional Radiology
St Vincent’s Hospital
University of New South Wales
Sydney
Who am I?

- South African / Australian trained Radiologist
- Emigrated to Australia in 1995
- Sub-specialized in Interventional Radiology
- Program Director for Medical Imaging and Head of IR at St Vincent’s Hospital, Sydney
What do Interventional Radiologists do?

• Radiology involves the use of imaging equipment to diagnose human illness
• Interventional Radiology is a sub-specialty of radiology in which we use imaging equipment to do minimally invasive procedures and treatments
• Commonly in lieu of “open” surgery, conventional treatment regimes and where the IR procedure is regarded as a better alternative
• What is an Interventional Oncologist – it’s an IR with an interest in treating patients with cancer
St. Vincent’s Hospital

- Vision of the Sisters of Charity: To serve the community through excellence in care, teaching and research in both public and private health
- Cancer Care Centre associated with:
  - Breast Screen NSW
  - Cancer Institute NSW
  - The Cancer Council NSW
  - CanTeen
  - Leukemia Foundation
- Construction of a new 10 storey Cancer Research Centre almost completed
- Centre for Interventional Oncology with referrals from all over NSW
Interventional Oncology at St Vincent’s Hospital

- Tertiary referral centre for Interventional Oncology
- St Vincent’s a leader in selective internal radiation therapy (SIRT) for liver cancer and have consulted with 672 patients since 2006 and have performed 589 SIRT procedures
- This is the largest single centre cohort of patients in the Asia Pacific region
- The experience has led to 14 Scientific papers being published
- In a typical week we would treat 3 to 5 patients as we are regarded as a “Centre of Excellence” performing SIRT and other Interventional Oncological procedures
Referral patterns

• GP to Oncologist to Interventional Radiologist
• GP to Oncologist to the Multi-disciplinary team meeting (MDT)
  – Surgeon, medical oncologist, radiation oncologist, radiologist, interventional radiologist, nuclear medicine specialist, other interested parties
  – Medical oncologists “give chemotherapy”
  – A progressive medical oncologist will consider all available therapies
Treatment options

- Surgical resection remains the only curative option, but only 5 – 15% patients are suitable
- Chemotherapy in combination with surgery
- Systemic chemotherapy alone
- Liver directed therapies e.g. SIRT or TACE
- Chemotherapy with SIRT
SIRT treatment paradigm

Potentially curative surgery or ablation

Resectable

Liver-only or liver-predominant mCRC

1st-line chemotherapy + SIRT

SIRT

2nd-line chemotherapy + SIRT

SIRT

n\textsuperscript{th}-line chemotherapy + SIRT

Chemorefractory?

Chemoembolisation?

SIRT

Decrease RR

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Becoming certified to perform SIRT

• c. 2000 – 2003
  – Interventional Radiologists in Asia Pacific, USA, Europe trained directly by the medical doctor from Sirtex
• c. 2003 – present
  – New IRs trained by IRs already expert in SIRT, known as Proctors
• c. 2007 – present
  – “freshly minted” IRs coming out of training have been exposed to SIRT as part of their training and it has become a more widely accepted therapy
Nomenclature

• **Primary liver cancer** = cancer that starts in the liver
  – Main types is hepatocellular carcinoma (HCC)
• **Secondary liver cancer** = cancer that starts in another organ and spreads to the liver
  – Main type is colorectal cancer (bowel cancer) (mCRC)
  – Others – breast, pancreatic, neuroendocrine cancer
• **Metastasise** = spread
Published data on liver tumours treated with SIR-Spheres

- In addition to CRC, mNET, mBCa and HCC efficacy has also been reported in other 2º liver metastases:
  - Cancer of unknown primary
  - Cholangiocarcinoma
  - Endometrial
  - Gastric
  - GIST
  - Lung
  - Melanomas
  - Malignant ocular melanoma
  - Oesophagus
  - Ovarian
  - Pancreatic
  - Prostate
  - Renal
  - Squamous cell carcinomas
  - Thymus
  - Thyroid
  - Lymphoma

Patient selection

- Primary liver cancer or secondary liver cancers of any origin
- Liver-dominant disease
- Life expectancy >3 months
- Quality of life issues e.g.
  - older patients
  - frail patients
  - patients with side-effects to the chemotherapy where SIRT is often used as first-line treatment
SIR-Spheres microspheres

- Resin microspheres
- 20 – 60 microns in diameter
- Pure beta emitter with half-life of 2.7 days
- Radiation distance 2.5mm – 11mm
Case 1
Case 1:
57 year old female with colorectal cancer metastasised to the liver

• Presenting complaint = Blood in stools -> Colonoscopy -> CT Scan showed metastases to the liver
• Surgery performed to remove the primary cancer in the colon
• Initial treatments received – 3 lines of Chemotherapy -> then became resistant to chemotherapy
• Referred to IR by MDT after discussion for SIRT
Pre-Implantation Angiogram
CT scans

A

B

C

D
Outcome following SIRT

Case 1:
57 year old female with colorectal cancer metastasised to the liver
- Discharged from hospital same day post-SIRT
- Fever & fatigue for 3-5 days (normal)
- Response (tumour shrinkage): 80-90% shrinkage
- Progression free survival (remission): 6 months 2.6 – 4.0 months
- Survival: Repeat Chemo and 2nd SIRT 23 months 6.4 – 10.7 months

Comparative “benchmark” from Phase II/III 2nd-line chemotherapy trials

Case 2
Case 2:
60 year old male with primary liver cancer (HCC)

• History of
  – Contracting hepatitis C 10 years ago
  – Subsequently developed cirrhosis
  – Recently presented with upper abdominal pain
  – CT scan and blood tests pointed to HCC

• Discussed at MDT meeting
  – Surgery and RFA were considered
  – Chemotherapy was not considered
  – Referred to IR for SIRT with objective to downstage to surgery
CT scan / angiogram HCC
Outcome following SIRT

Case 2:

60 year old male with primary liver cancer (HCC)

- Discharged from hospital same day post-SIRT
- Strong partial response after SIRT
- Underwent surgical resection 8 weeks post-SIRT following successful down-staging
- Survival 31 months post surgery and still alive
Effective tumour targeting

What do we tell the patients:
5-15% not going to respond
85-95% are going to respond but differently
Kennedy et. al.

Key data published

• Where will SIRT be placed once RCT data available?
  – mCRC
    • SIRFLOX (global trial)
    • FOXFIRE (UK trial)
  – HCC
    • SIRveNIB (APac trial)
    • SORAMIC (European trial)
      SARAH (French trial)
St. Vincent’s results

• Overall survival for all cancers treated with SIRT
• Overall survival for all colorectal cancer (CRC) patients treated with SIRT
Overall survival from SIRT

Months from receiving or potentially eligible for SIRT

- **Logrank: p < 0.001** (adjusted p<0.001)
- **Hazard ratio**
  - **SIRT:no SIRT**

**Numbers at risk**

<table>
<thead>
<tr>
<th></th>
<th>Received SIRT</th>
<th>Standard care</th>
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<tbody>
<tr>
<td><strong>Recevied SIRT</strong></td>
<td>339</td>
<td>51</td>
</tr>
<tr>
<td><strong>206</strong></td>
<td>23</td>
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<td><strong>126</strong></td>
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<tr>
<td><strong>24</strong></td>
<td>2</td>
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</table>

**MS = 12m SIRT**
**MS = 6.3m SC**
Survival in patients with CRC

- **Survival over time**
  - Proportion surviving: 0.0, 0.2, 0.4, 0.6, 0.8, 1.0
  - Months from receiving or potentially eligible for SIRT: 0, 6, 12, 18, 24, 30, 36

- **Numbers at risk**
  - Received SIRT:
    - 224
    - 137
    - 81
    - 47
    - 36
    - 22
    - 16
  - Standard care:
    - 29
    - 17
    - 7
    - 4
    - 3
    - 1
    - 0

- **Logrank test**:
  - Logrank: p = 0.001
  - Adjusted p = 0.001

- **Hazard ratio**
  - SIRT: no SIRT
  - Standard care (SC)
  - MS = 11.9m SIRT
  - MS = 6.6m SC

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Thank You