



Treatment of HCC in real life-Chinese perspective

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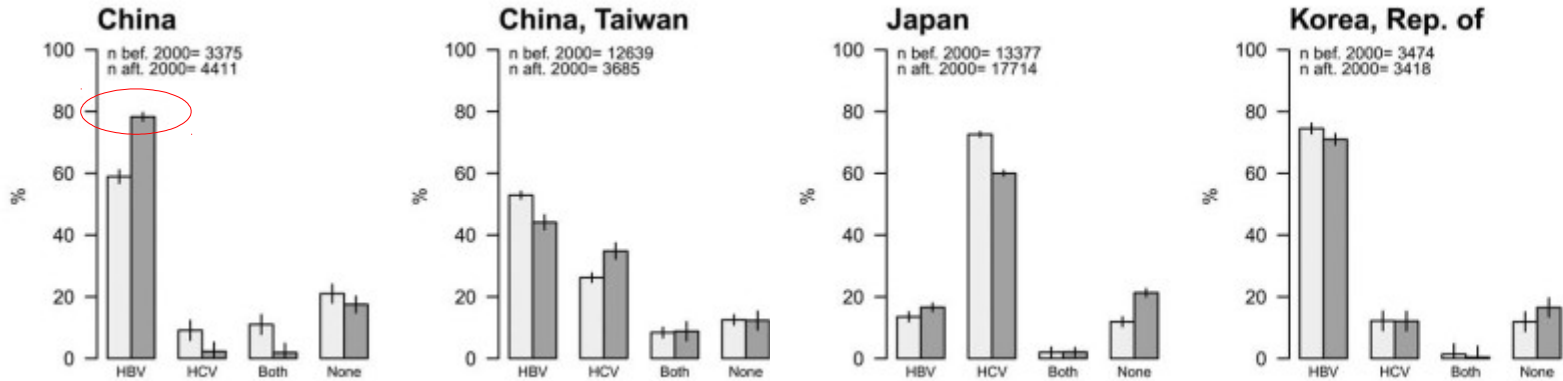
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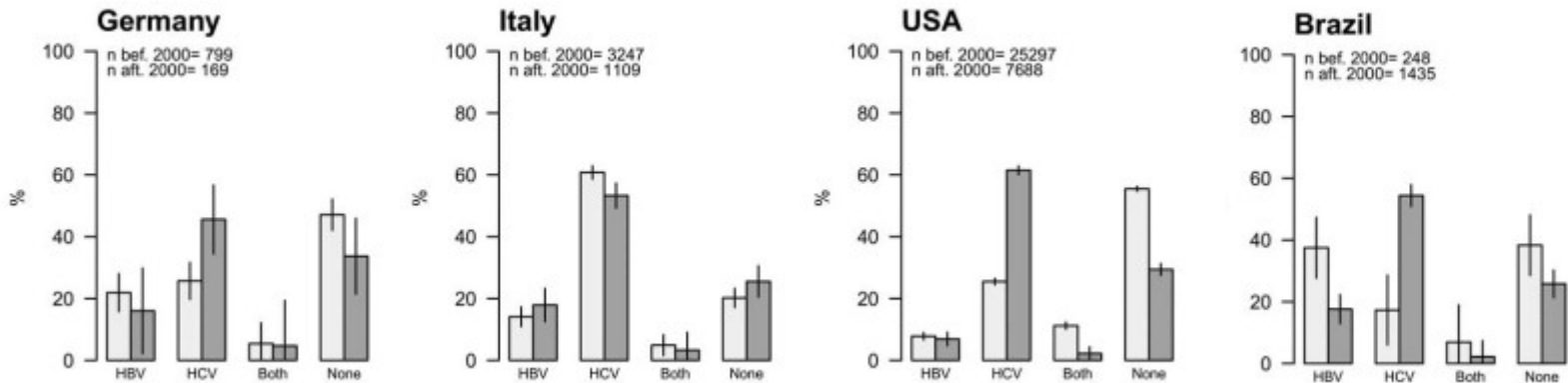
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Relative Contribution of HBV and HCV to HCC

Southeast Asia



Europe & America



HBV Infection is the Leading Cause of HCC in China

	North America N=2326	Europe N=3673	China N=8683	Taiwan N=1587	South Korea N=1227	Japan N=534
HCC risk factors, n(%)	n = 2243	n = 3466	n = 8538	n = 1580	n = 1172	n = 446
HBV	522 (23)	362 (10)	6575 (77)	987 (63)	884 (75)	64 (14)
HCV	876 (39)	1590 (46)	255 (3)	489 (31)	112 (10)	284 (64)
ALD	471 (21)	1290 (37)	416 (5)	66 (4)	110 (9)	59 (13)
NASH	275 (12)	334 (10)	53 (1)	84 (5)	68 (6)	9 (2)

HBV Infection is the Leading Cause of HCC in Hong Kong

	Hong Kong* N=1675
HCC risk factors, n(%)	n = 1112
HBV	945 (81)
HCV	75 (7)
HCV+HBV	100 (0.9)
Other*	189 (17)

* Other includes alcoholic, fatty liver disease, haemochromatosis, autoimmune hepatitis and cryptogenic

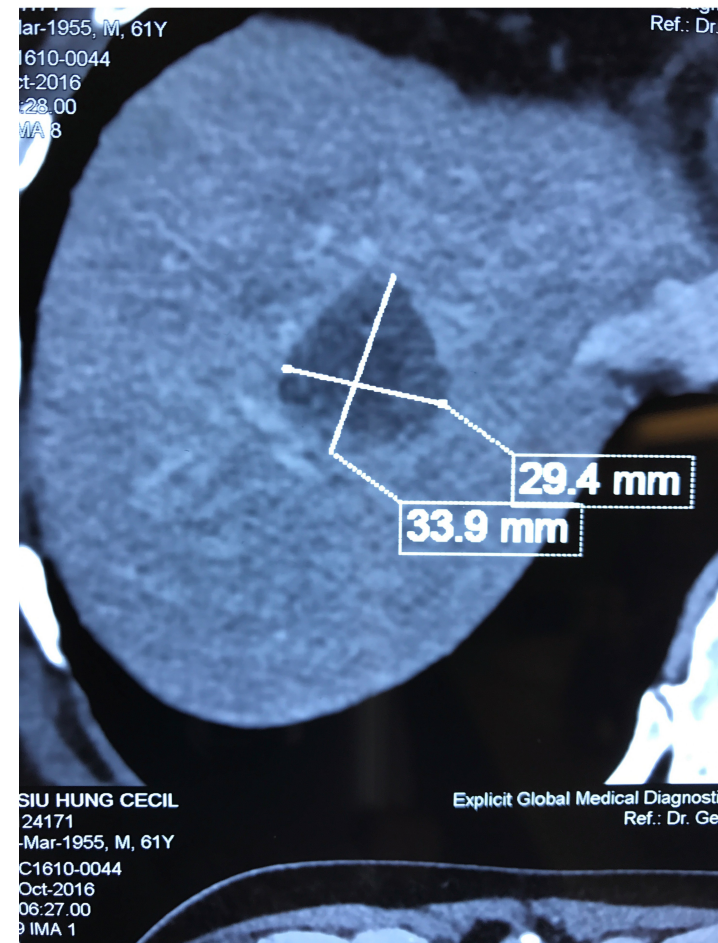
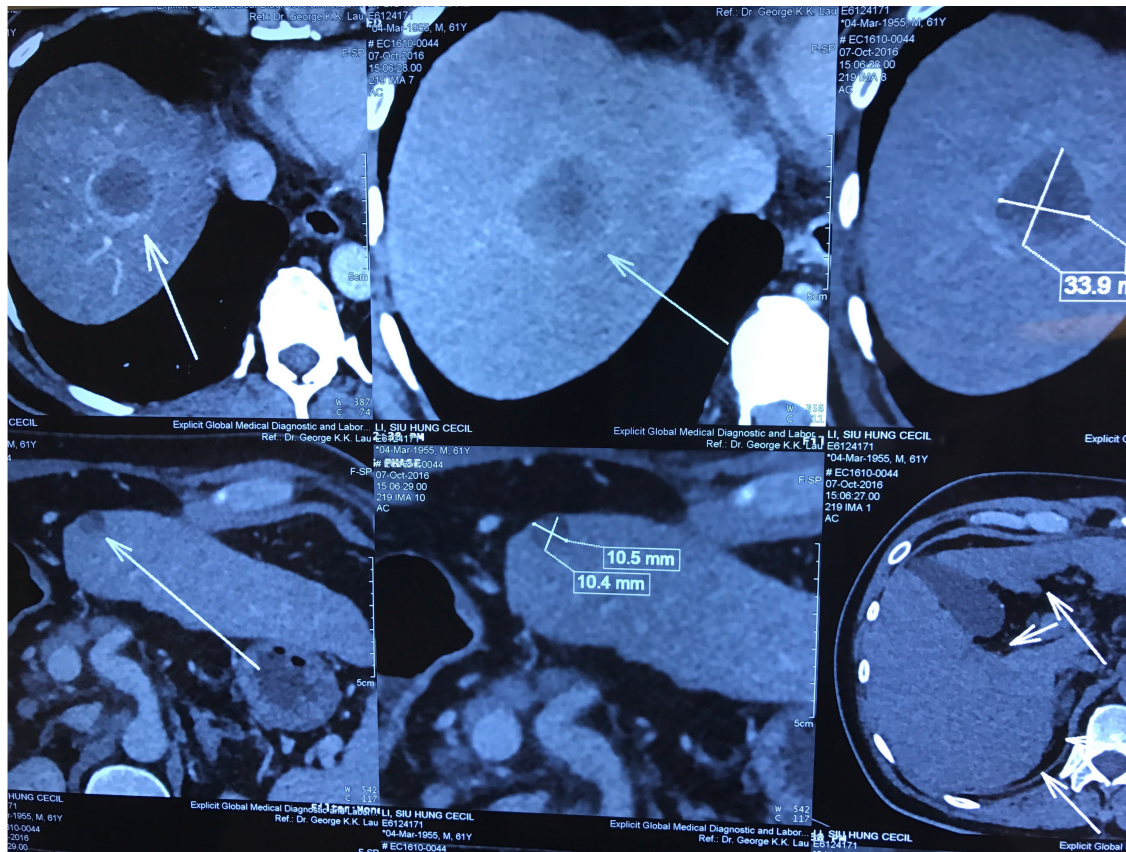


Case 1

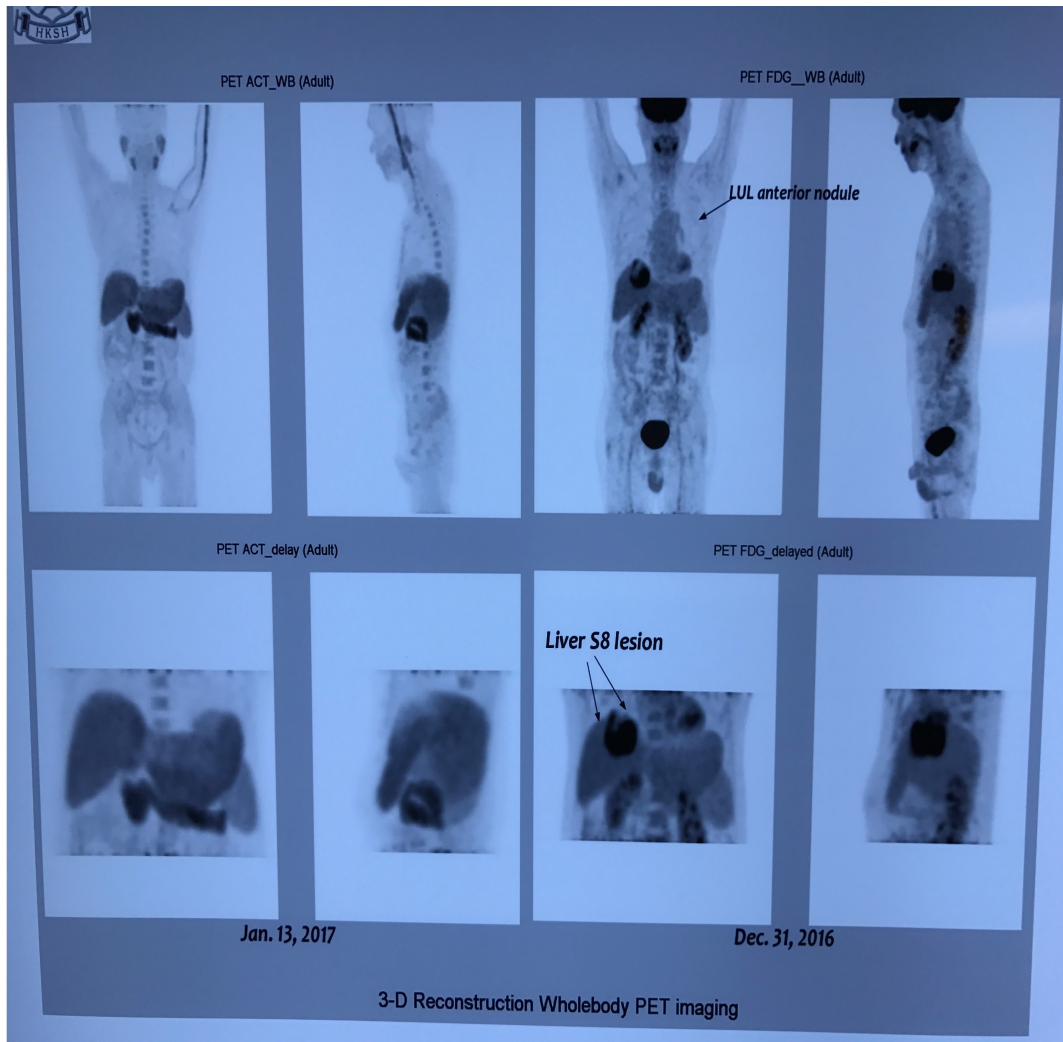
Chinese Male 62

- HBsAg +, HBeAg- on ETV 0.5 mg since 2009
- Family History (3 brothers and 1 sister)
 - Father died at 67 -HCC
 - Elderest brother died at 61-HCC
 - Second elderest brother died at 60-HCC
- USS and AFP every 3-6 months since 2014
- 4th Oct 2016
 - Asymptomatic
 - Depressed as second brother (M/64) dying of HCC
- USS-2-3 cm lesion in right lobe
 - Bilirubin 8 umol/L, Albumin 41 g/L, ALT- 40 IU/ml
 - Platelet $120 \times 10^9/L$, INR 1.1
 - AFP-12 ng/ml
 - Serum HBV DNA -, eAg-

SOL in liver detected by CT -Oct 2016



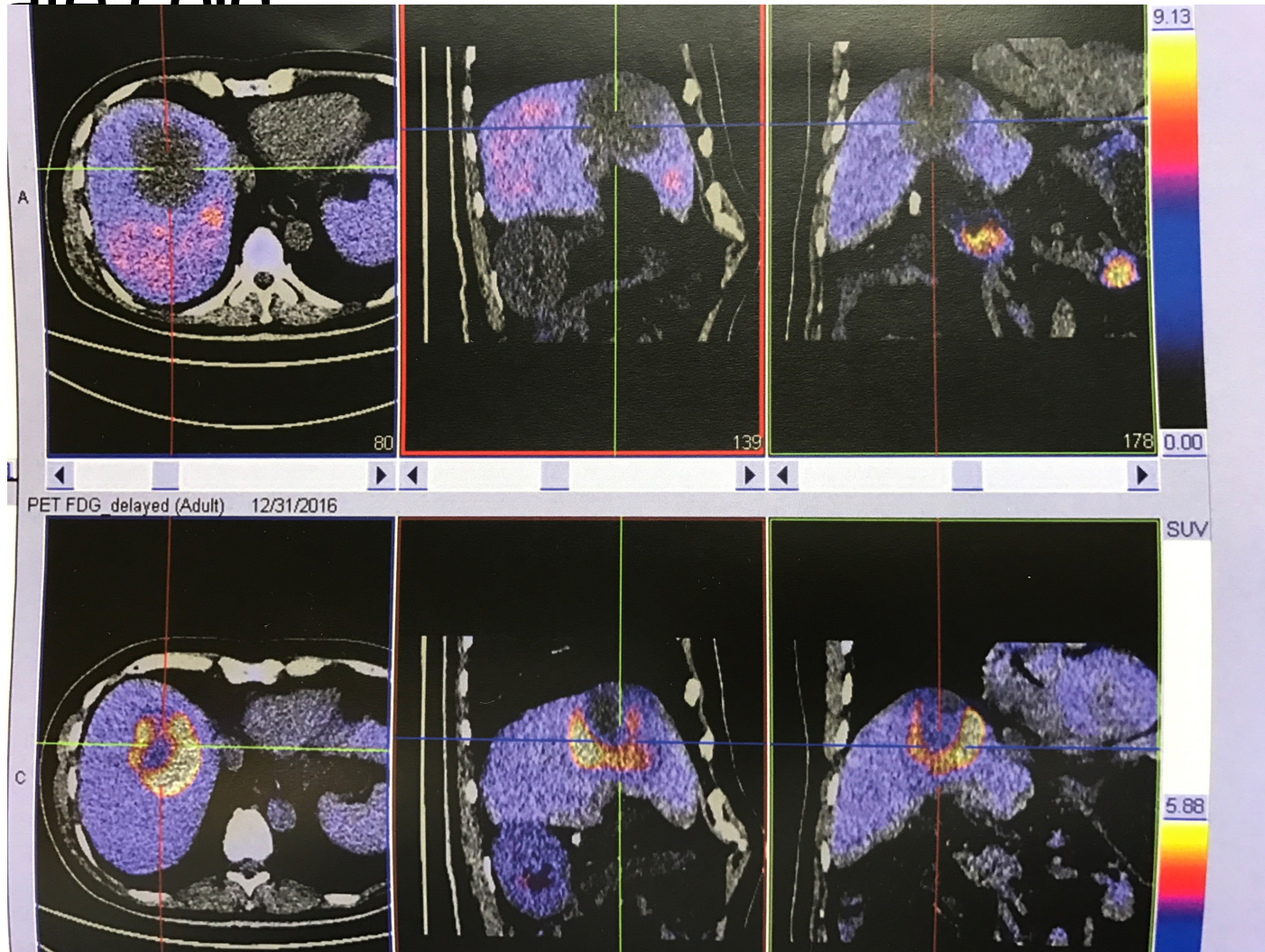
PET-CT scan-Jan 2017



- Large hypodense at segment 8 (SUV11.4)
- Small lesion in left upper lobe of the lung (SUV 1.3)

Segment 8 lesion

7.3x6.9 cm: ^{18}F FDG-avid (SUV 11.4) ^{11}C -acetate cold



Further investigation

- CT guided lung biopsy
 - Lesion shown on PET-CT scan- benign

Points for discussions

Current guidelines for treatment and screening

- Adequate?

How to treat this patient?

- Solitary lesion
- Rapidly growing

Recommendation on HCC surveillance in HBV patients



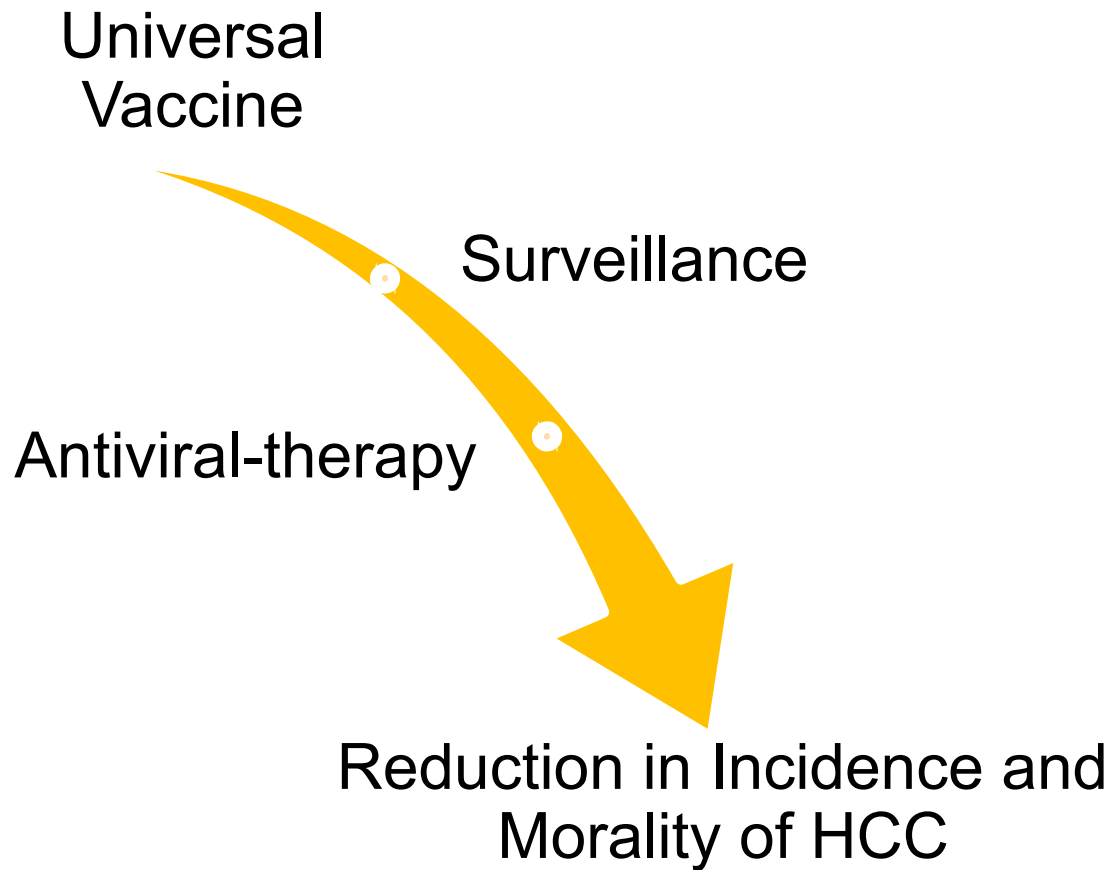
	APASL 2010	AASLD 2011	EASL-EORTC 2012
Population	Cirrhosis	<ul style="list-style-type: none"> - Cirrhosis - Male age > 40 - Female age > 50 - Family history of HCC - African/North American Blacks 	<ul style="list-style-type: none"> - Cirrhosis - HBV carrier with active hepatitis - Family history of HCC
Modality	Ultrasound scan Alpha-fetoprotein	Ultrasound scan	Ultrasound scan
Interval	6-monthly	6-monthly	6-monthly

Omata et al, Hepatol Int, 2010; 4: 439-474

Bruix et al, Hepatology, 2011; 53: 1020-2

EASL-EORTC clinical practice guidelines: Management of hepatocellular carcinoma, J Hepatol, 2012; 56: 908-43

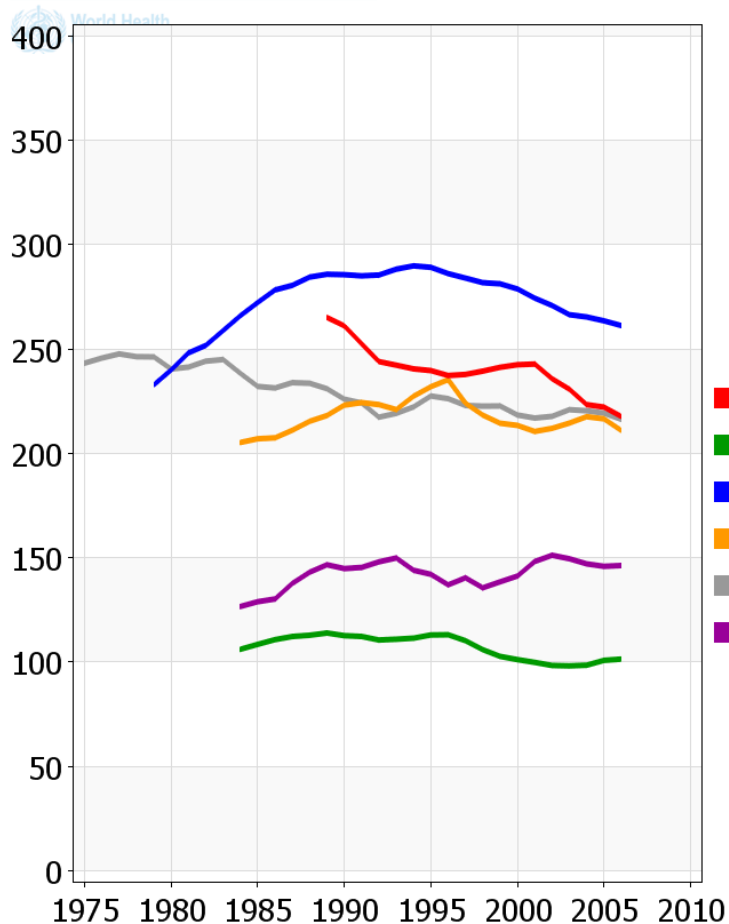
HBV-associated HCC prevention



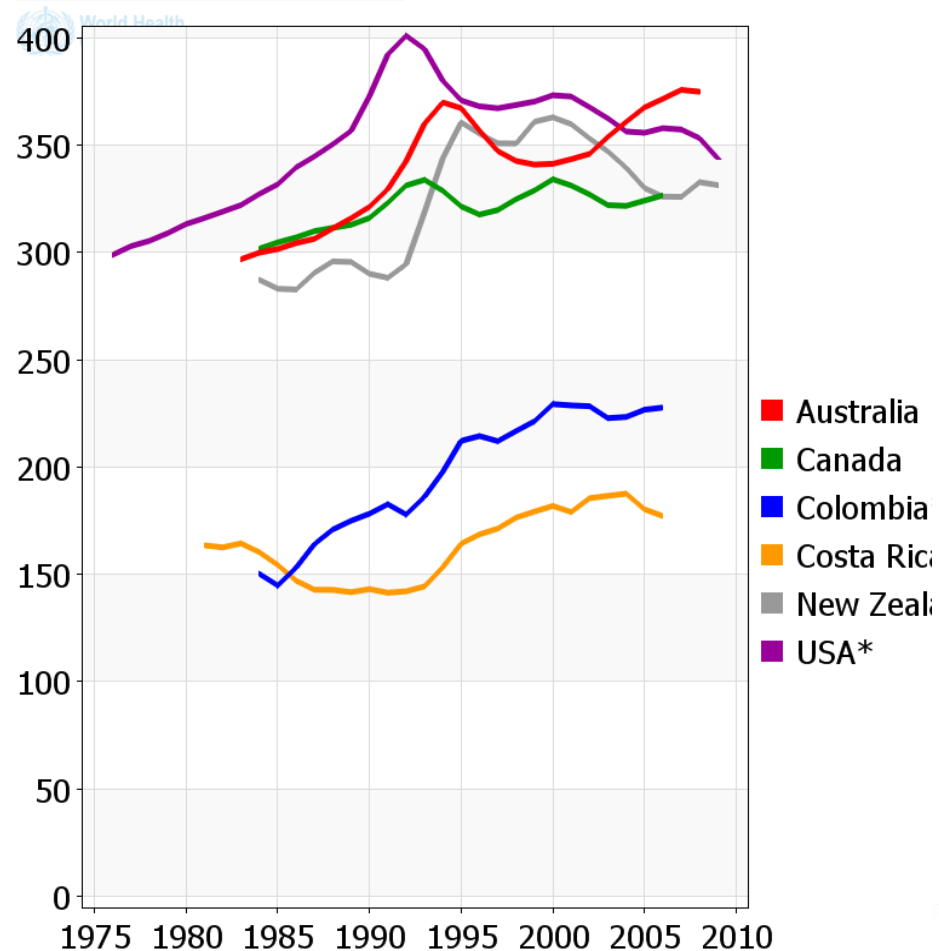
Incidence of HCC is increasing (Male)



International Agency for Research on Cancer

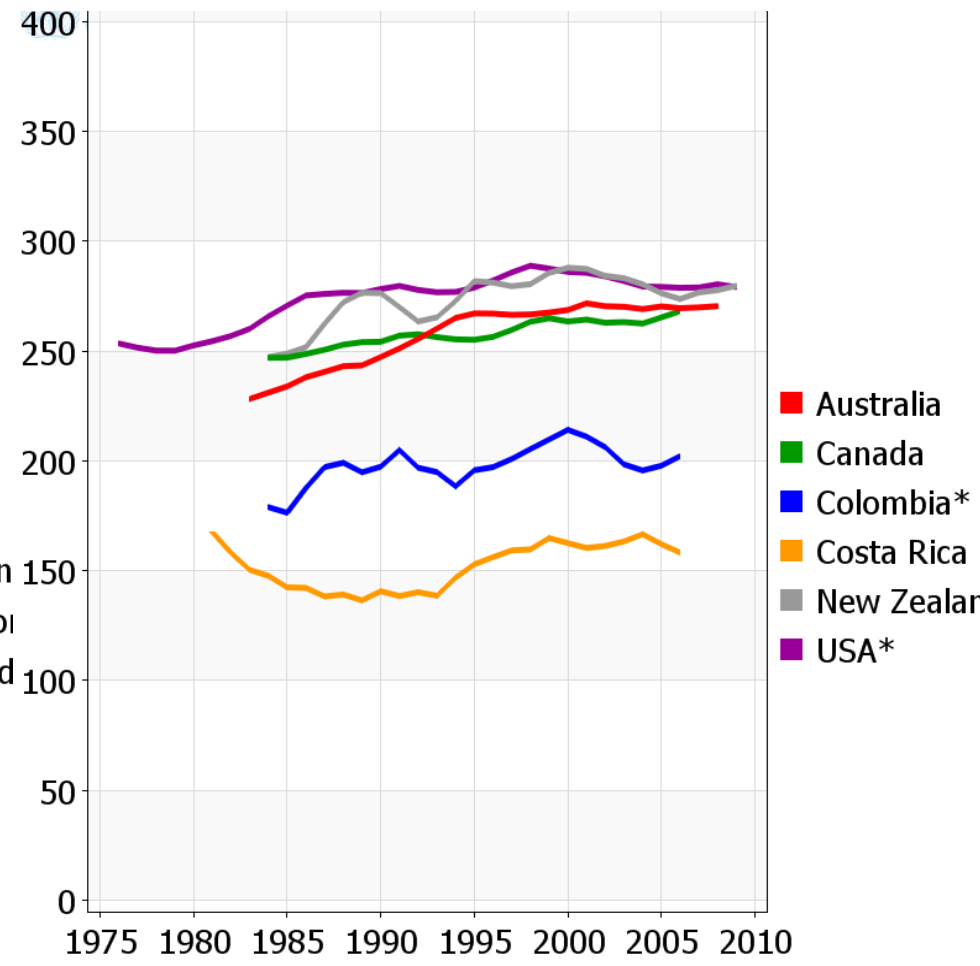
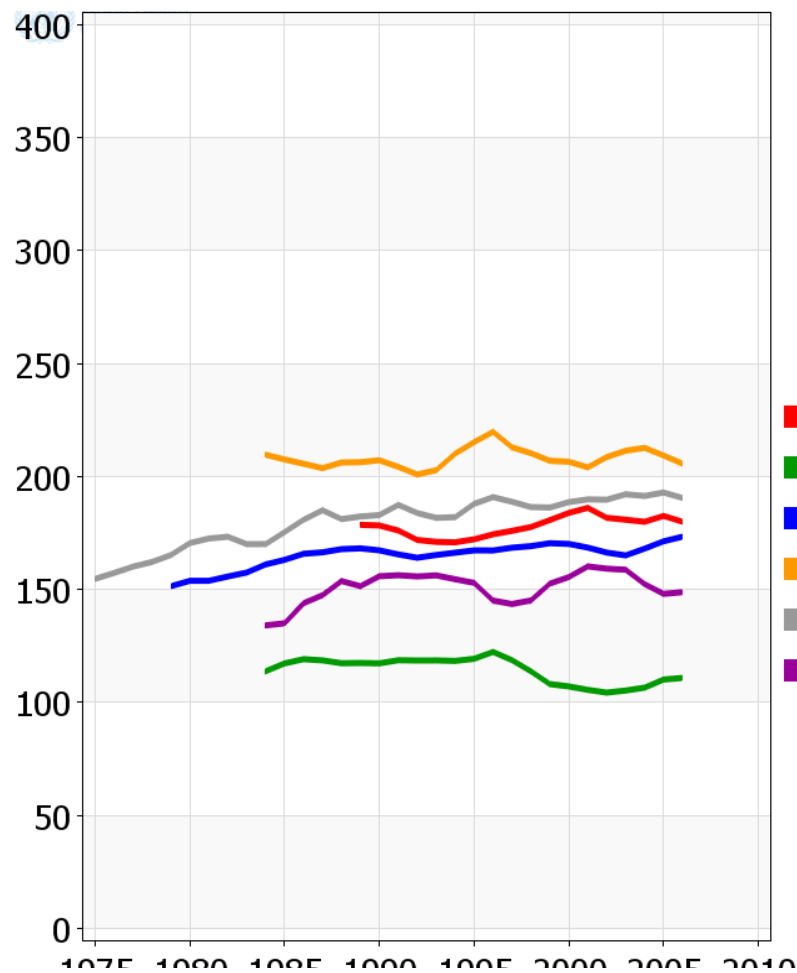


International Agency for Research on Cancer



Trends in incidence of cancer in selected countries: age-standardised rate (W) per 100,000, men

Incidence of HCC is increasing (Female)

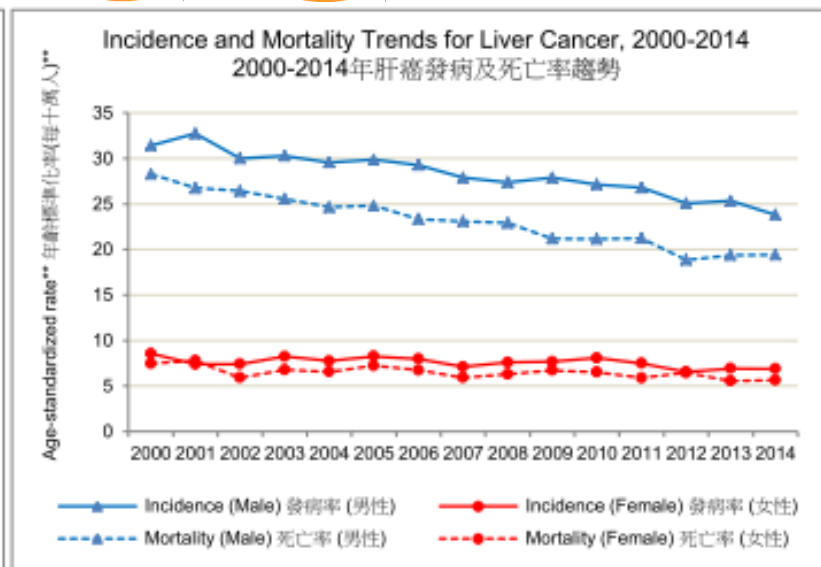
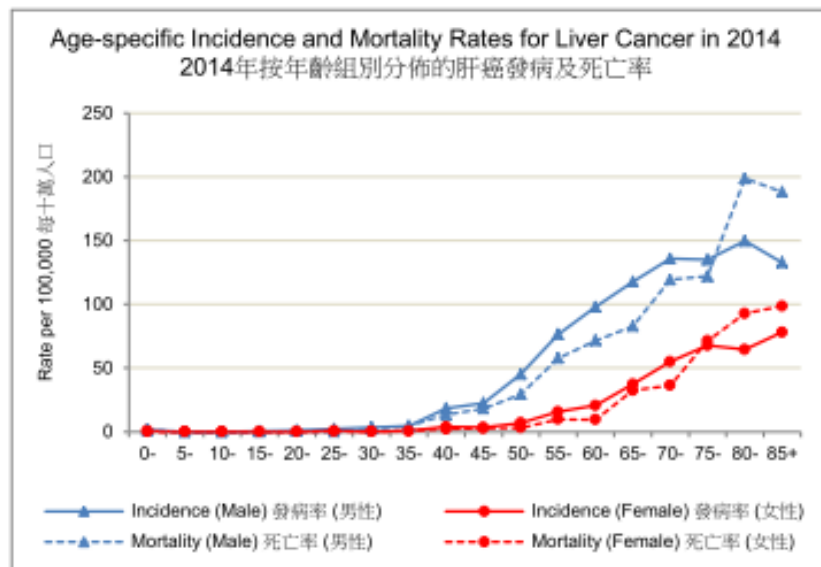


Trends in incidence of cancer in selected countries: age-standardised rate (W) per 100,000, women

HCC in Hong Kong (2014)

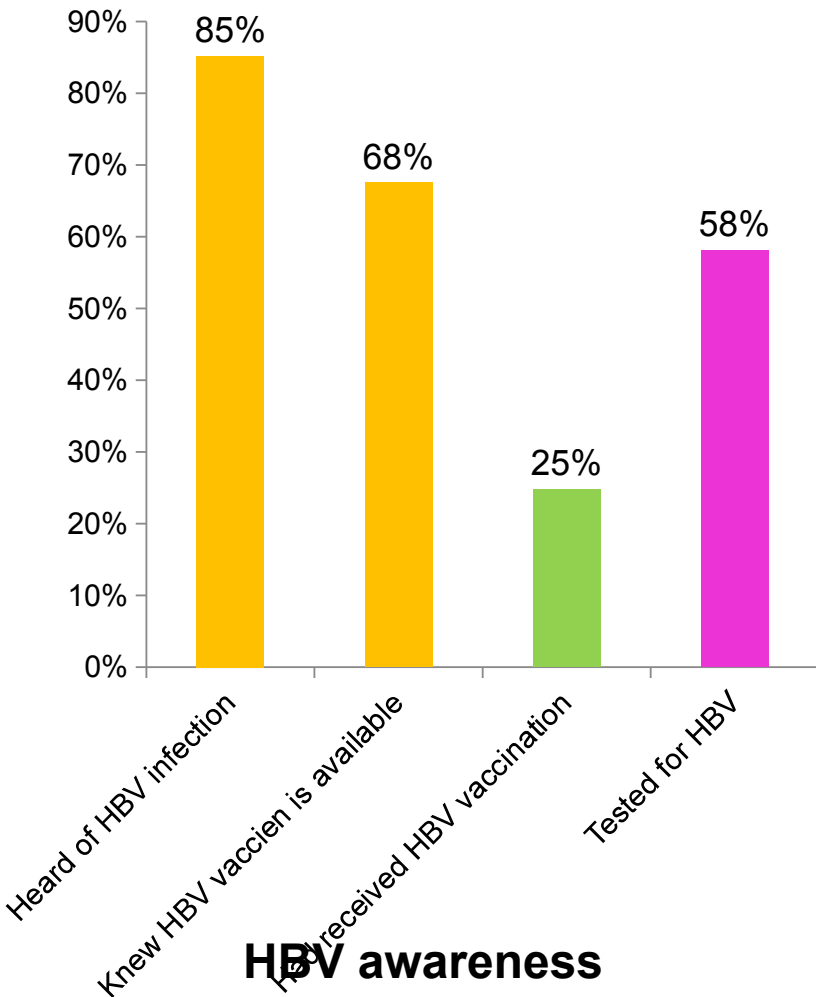


	Incidence 發病		Mortality 死亡	
	Male 男性	Female 女性	Male 男性	Female 女性
Number of cases registered 登記個案	1,369	478	1,149	436
Rank 排名	4	7	2	4
Proportion of all cancers 佔性別總數百分比	9.1%	3.3%	14.0%	7.8%
Male : Female ratio 男女比例	2.9	1	2.6	1
Median age (years) 年齡中位數 (歲)	64	72	66	77
Crude rate* 粗發病/死亡率*	40.9	12.3	34.3	11.2
Age-standardized rate (World)** 年齡標準化率 (世界)**	23.8	6.9	19.4	5.7
Lifetime risk before age 75 一生累積風險 (0-74歲)	1 in 38	1 in 139	1 in 50	1 in 207
Mortality : Incidence ratio 死亡對發病比 (2010-14)	0.78	0.84		

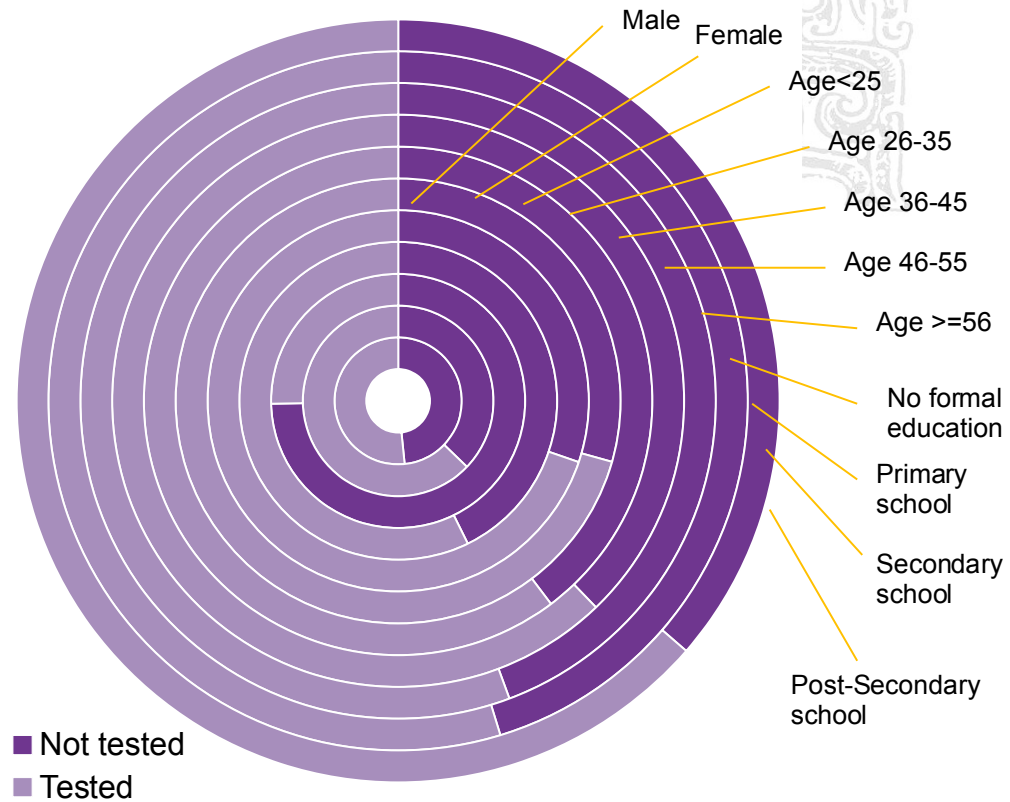


Why the incidence is not decreasing?

Awareness of HBV is insufficient



HBV awareness



HBV Testing

HCC is Diagnosed at More Advanced Stages in China



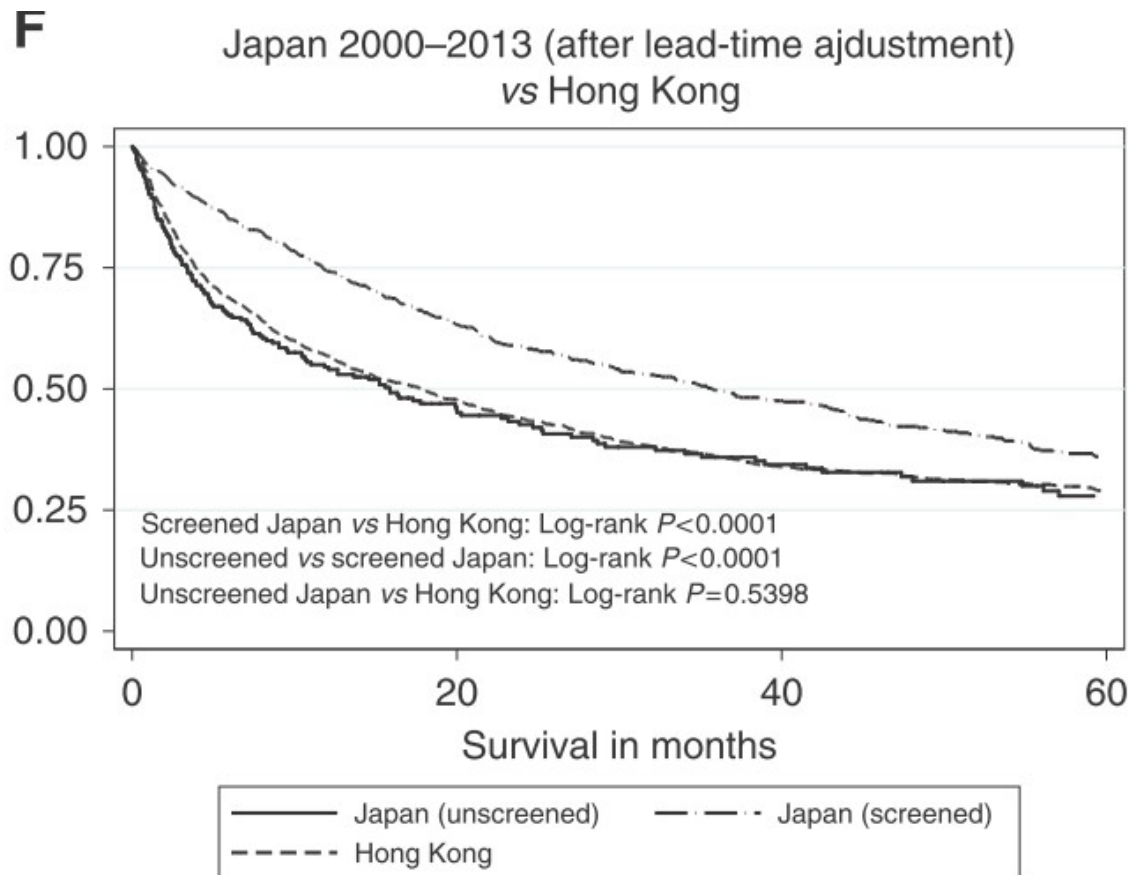
	North America N=2326	Europe N=3673	China N=8683	Hong Kong* N=3856	Taiwan N=1587	South Korea N=1227	Japan N=534
BCLC stage, n (%)	n = 1588	n = 2261	n = 6501	n = 3571	n = 1461	n = 1152	n = 433
0	107 (7)	84 (4)	192 (3)	0	213 (15)	82 (7)	107 (25)
A	474 (30)	582 (26)	1973 (30)	813 (23)	810 (55)	290 (25)	206 (48)
B	157 (10)	253 (11)	591 (9)	910 (25)	176 (12)	149 (13)	62 (14)
C	673 (42)	1158 (51)	3606 (55)	1506 (42)	250 (17)	605 (53)	53 (12)
D	177 (11)	184 (8)	139 (2)	342 (1)	12 (1)	26 (2)	4 (1)

BCLC: Barcelona-Clinic Liver Cancer

Park et al, Liver Int. 2015; 35: 2155–2166

* Yau et al, Gastroenterology 2014;146:1691–1700

Surveillance is important to overall survival



Survival improved over each following decade, from 8.8 months between 1980 and 1989 to the most recent figure of over 4 years in Japan (2000–2013), which was significantly higher than that in Hong Kong.

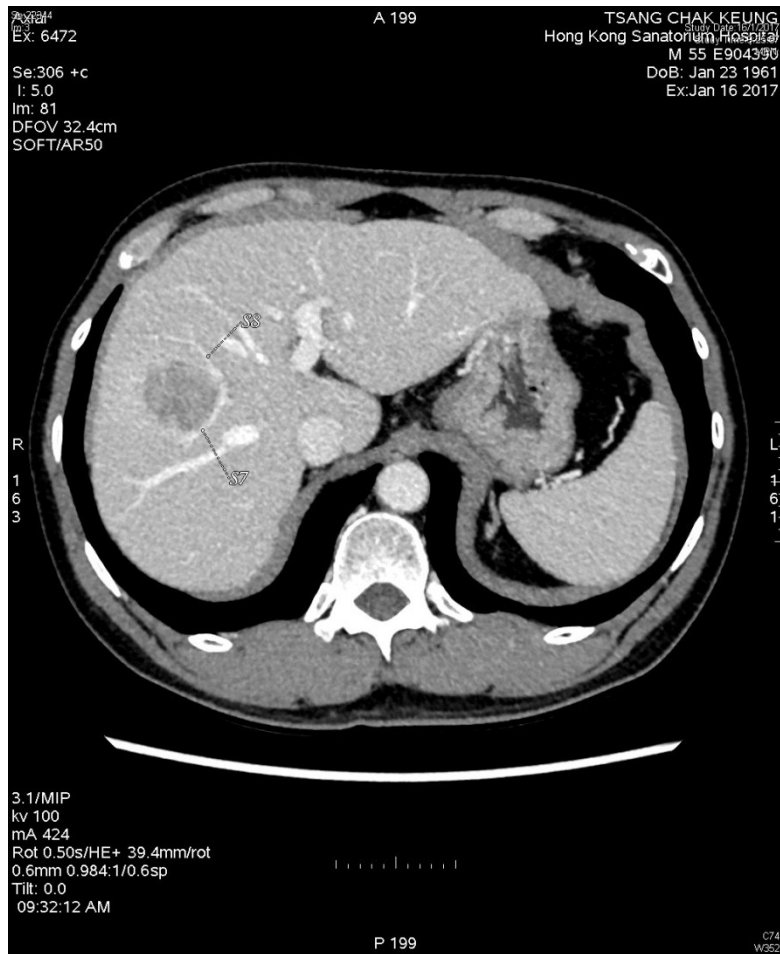


Case 2

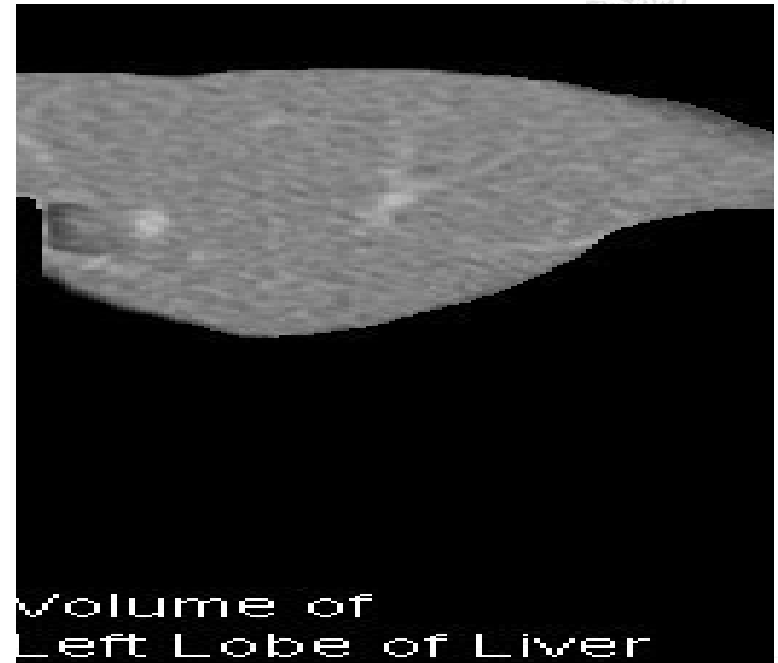
Male 55

- HBV carrier
- Ischemic heart disease on aspirin
- Good functional status
- Screening USG then CT showed 3.1 cm HCC in right liver
- Bilirubin 10 $\mu\text{mol/L}$
- Albumin 42 g/L
- Platelet $153 \times 10^9/\text{L}$
- INR 1.05
- AST ALT normal
- AFP normal

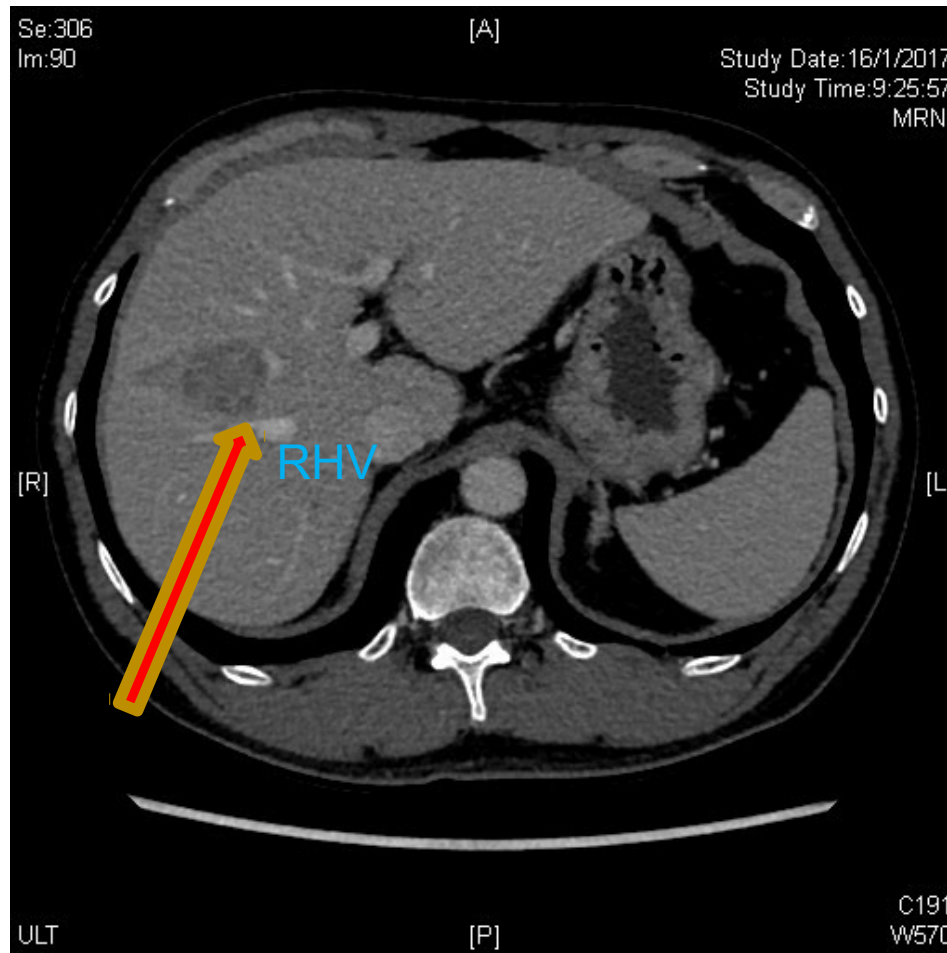
CT scan



CT volumetry



CT volumetry



Treatment Options

- Right anterior sectionectomy (S5 + S8)
- Right hepatectomy (future left liver adequate?)
- Right portal vein embolization
- ALPPS (Associating liver partition and portal vein ligation for staged hepatectomy)
- TACE / TARE
- Radiofrequency ablation

Liver volume analysis

$$\text{Standard liver volume (mL)} = 1.19 \times [(\text{Body weight (kg)} \times 12.3 + 218 + 51 \text{ (if male)})]$$

Chan SC et al. J of Gastro 2006, Hep Int 2011

Body weight = 62.9 kg

Standard liver volume = 1,227 mL

Left liver 323 mL

Left liver/standard liver volume = 26%

Progress

- Right hepatectomy

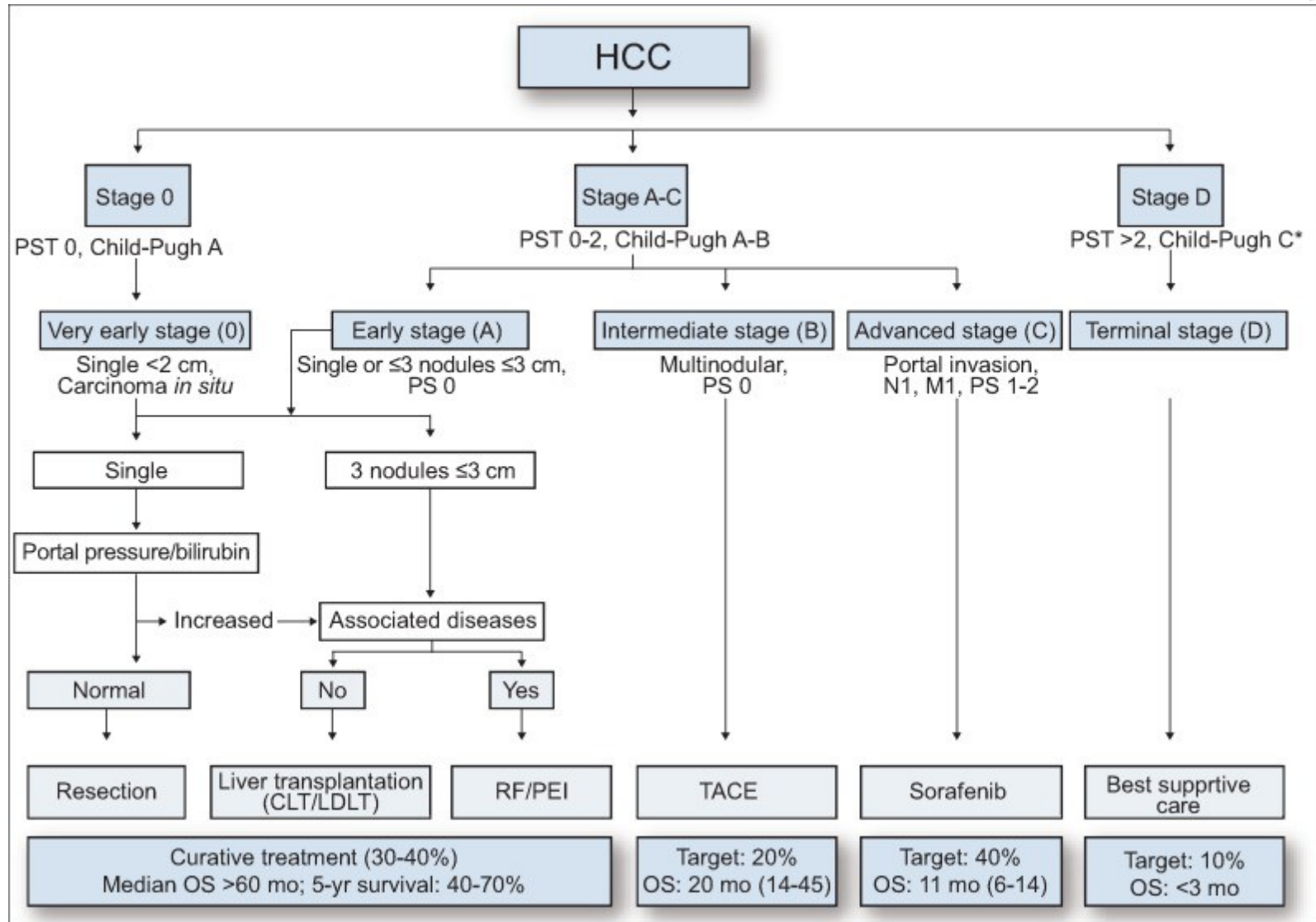
- INR:

(D0) 1.29 -> (D1) 1.54 -> (D2) 1.52 -> (D3)
1.29

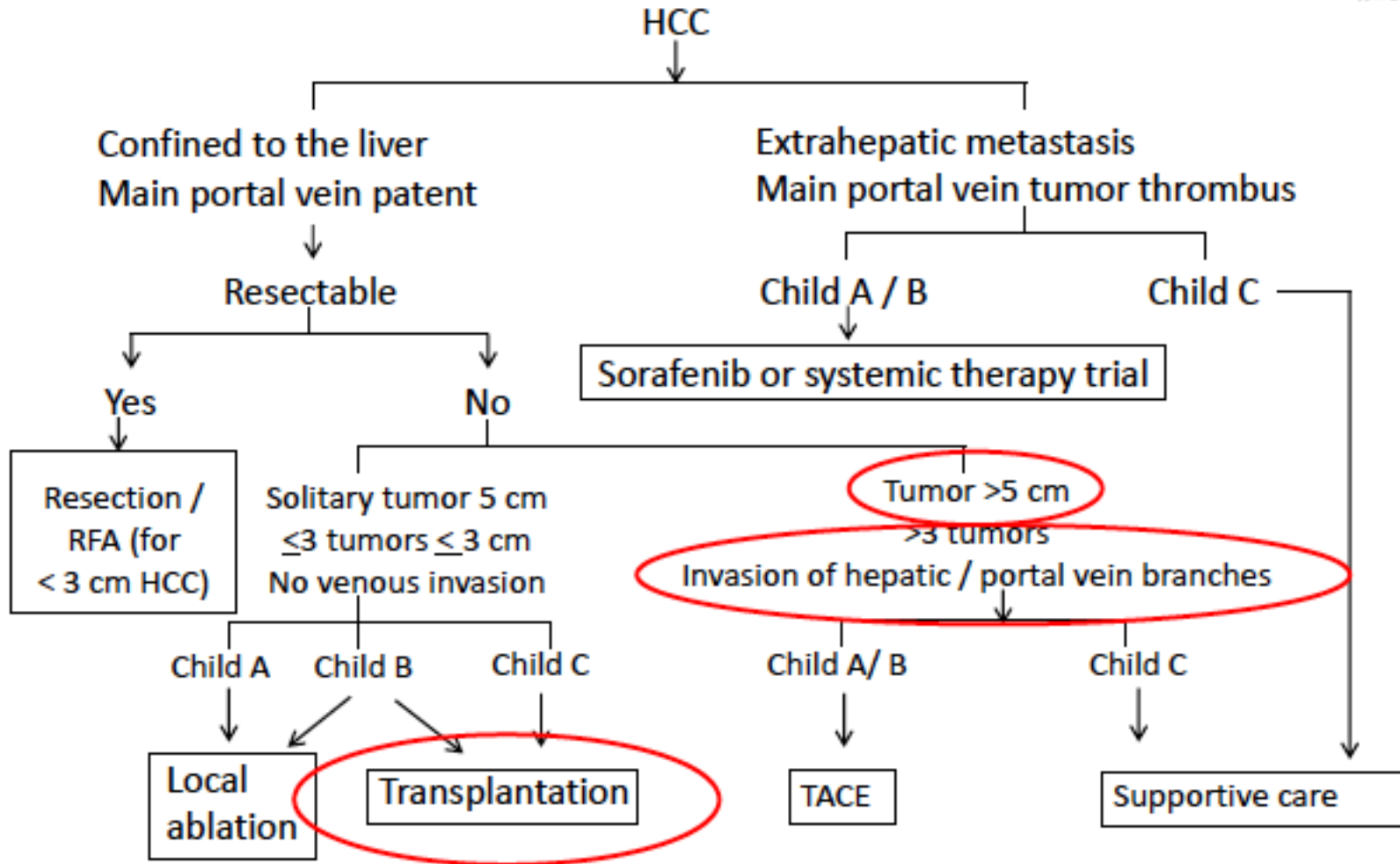
Histopathology

- Moderately differentiated HCC
- No vascular invasion
- Resection margins clear

AASLD/EASL-EORTC treatment algorithm for HCC



APASL treatment algorithm for HCC



OUR TEAMS



- Liver Cirrhosis Diagnosis and Treatment Center, 302 Military Hospital
Beijing 302- Hong Kong H & H Liver



Institute of Translational Hepatology (Beijing)



H & H Medical Group (Hong Kong)



WELCOME TO SHANGHAI



APASL 2017 SHANGHAI

The 26th Conference of the Asian Pacific Association for the Study of the Liver

February 16 (Thu) -19 (Sun), 2017

Shanghai, China

www.apasl2017.org

Host: The Asian Pacific Association
for the Study of the Liver (APASL)

Organizer: China Foundation for
Hepatitis Prevention and Control (CFHPC)





Case 3

CHEUNG, CHI HUNG_Z079944	in mm		C-11 ACT	
			Standard	Delayed
Site	LD	PD	SUVmax	SUVmax
Segment V liver lesion	16.0	14.8	7.3	7.4
Anterior mediastinal soft tissue density	23.5	14.2	2.5	-

Note: LD=longest diameter; PD=diameter perpendicular to LD

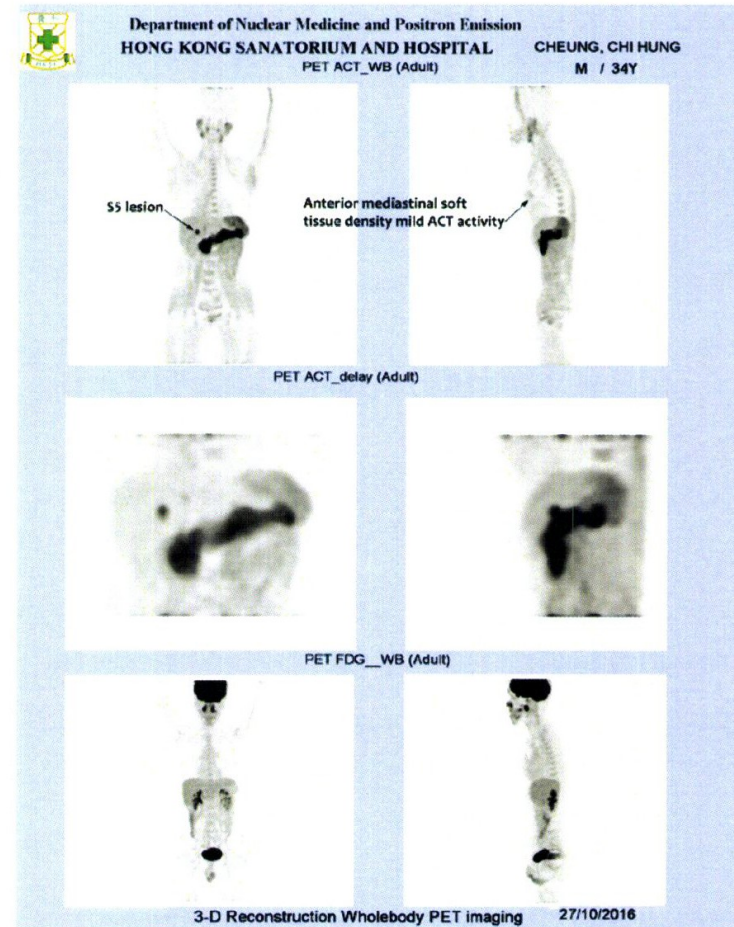
Impression:

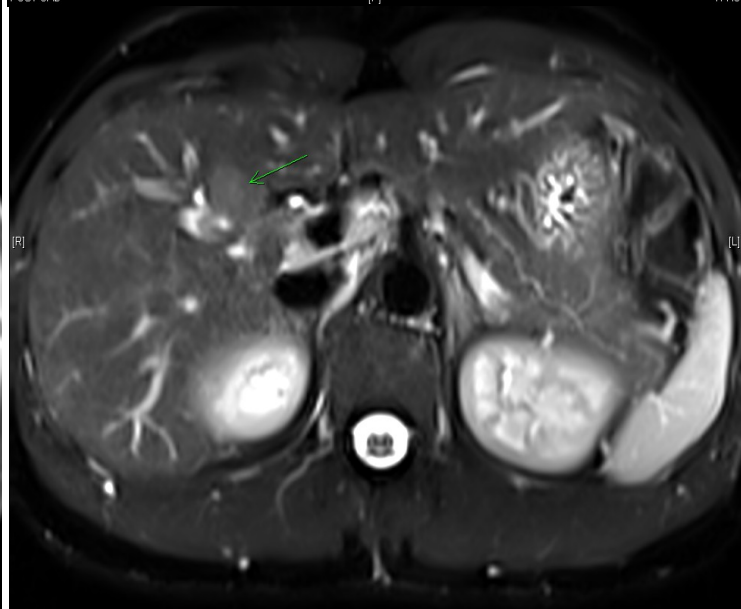
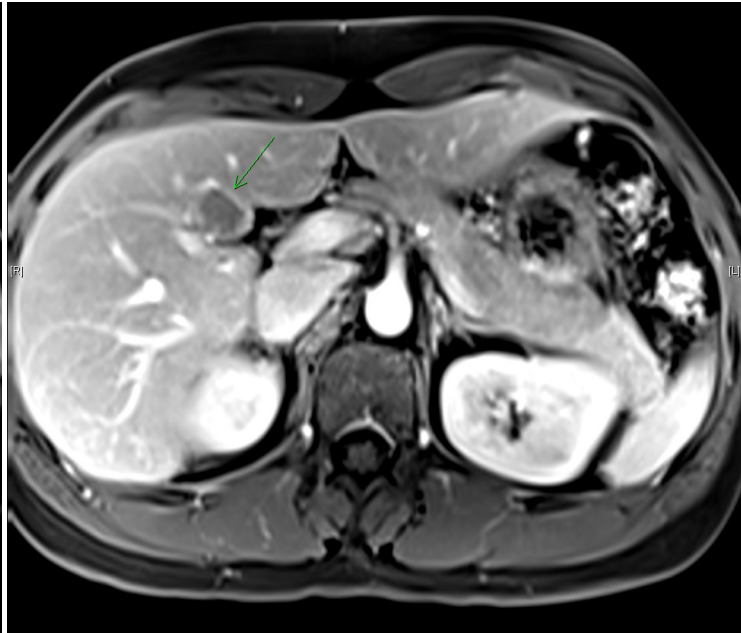
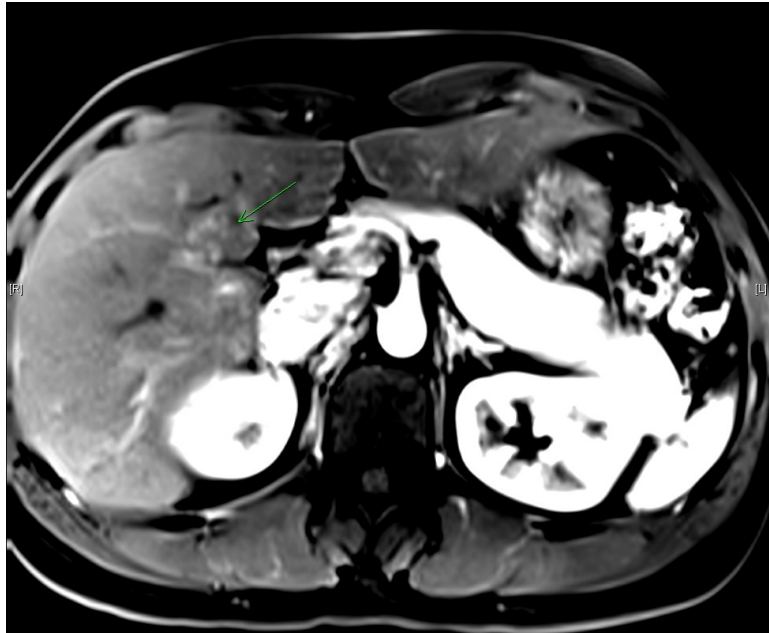
1. Solitary hypermetabolic segment V lesion of 16 mm LD x 15 mm PD demonstrates marked ^{11}C -acetate and background ^{18}F FDG avidity which is corresponding to the MR concerned lesion. In HBV carrier patient with elevated AFP, it is suggestive of a well-differentiated hepatocellular carcinoma.
2. No regional metastatic lymphadenopathy and no tumor thrombi portal veins or IVC.
3. Anterior mediastinal soft tissue density with diffuse mild ^{11}C -acetate activity and no calcification is suggestive of thymic tissue.
4. No other suspicious activity in the remaining body survey.

Thank you very much, Prof. Chan, for your referral.



William S.K. Cheung, *MChB, FHKCR, FHKAM (Radiology)*
Specialist in Nuclear Medicine, Department of Nuclear Medicine & P.E.T., HKSH





C322

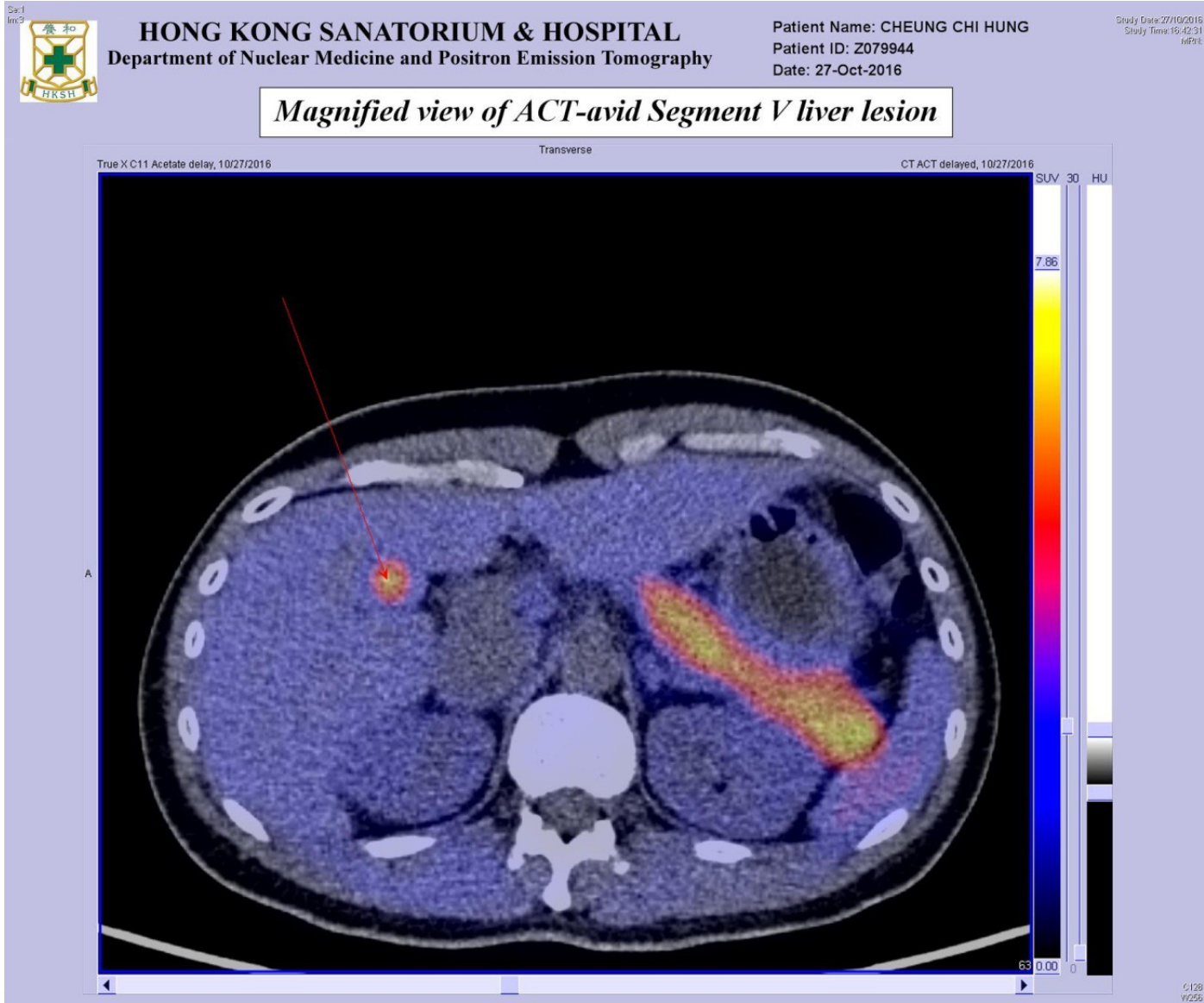
W448

ity & Health



解放军三〇二医院
302 HOSPITAL PLA

Dual Tracer (FDG & Acetate) PET Scan



Dual Tracer (FDG & Acetate) PET Scan

Seq:1
Im:5

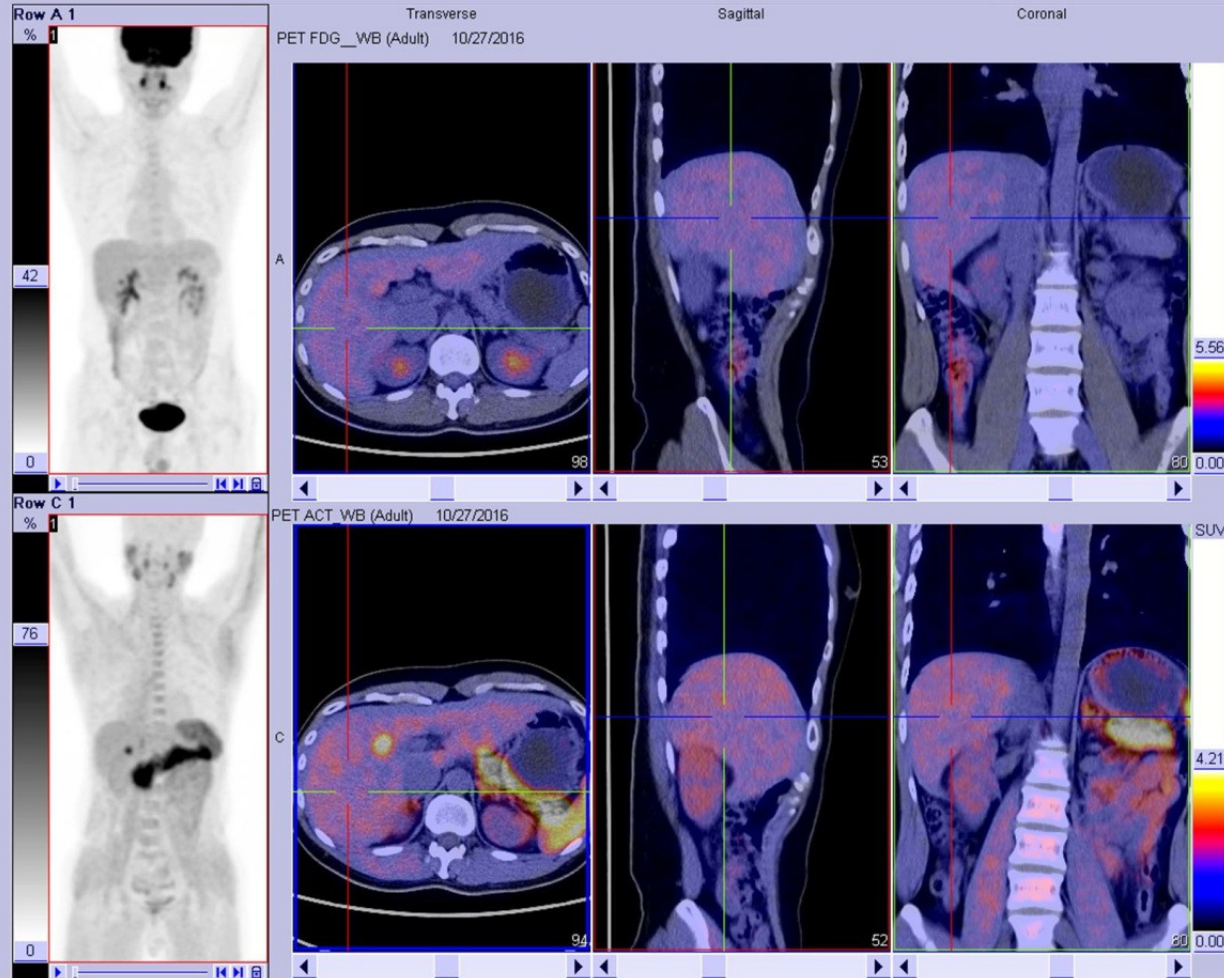


HONG KONG SANATORIUM & HOSPITAL
Department of Nuclear Medicine and Positron Emission Tomography

Patient Name: CHEUNG CHI HUNG
Patient ID: Z079944
Date: 27-Oct-2016

Study Date: 27/10/2016
Study Time: 15:42:31
M:Pat

No focal ACT or FDG avid lesion in rest of liver



Liver Volumetric Analysis

- Right lobe liver volume = 691 cc.

Left lobe liver volume = 346 cc.

- Body weight 64 kg

- Standard liver volume 1,257 mL

Chan et al. 2006 J Gastro, 2011 Hep Int

- Remnant left liver/standard liver = 27%

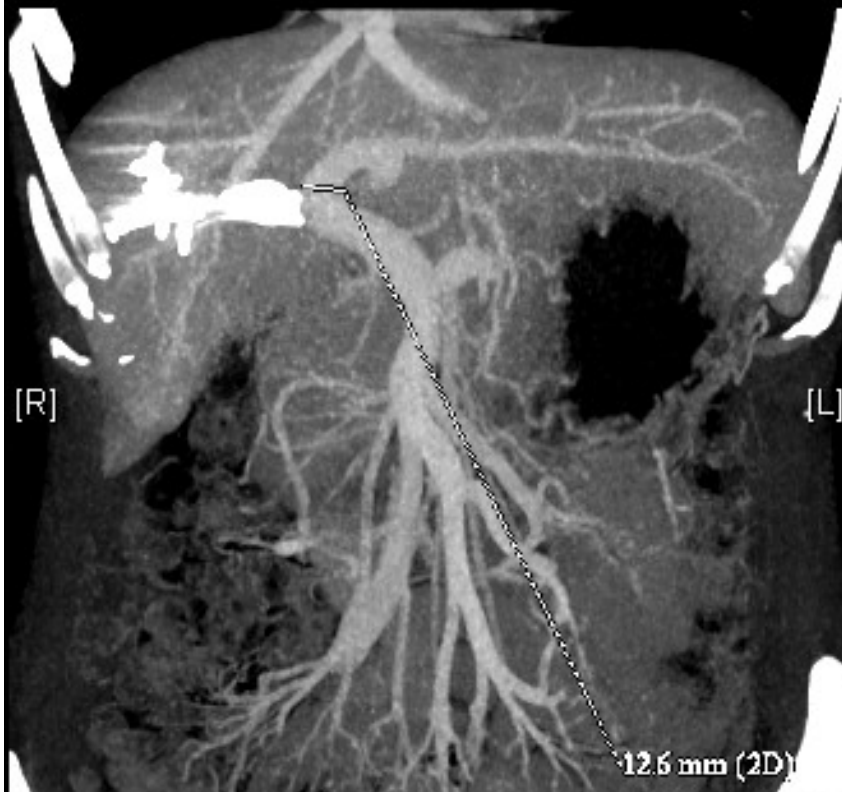
- Will be less since liver resection includes segment 4b and tumor volume small

- N.B. total liver volume 1,037 ml only, thus cirrhotic

Se:742
Im:8

[H]

CHEUNG, CHI, ...
Study Date:28/1...
Study Time:9:31:...
MRN:Z079944



Relevant pathology
APPLIED

[F]

C201
W313



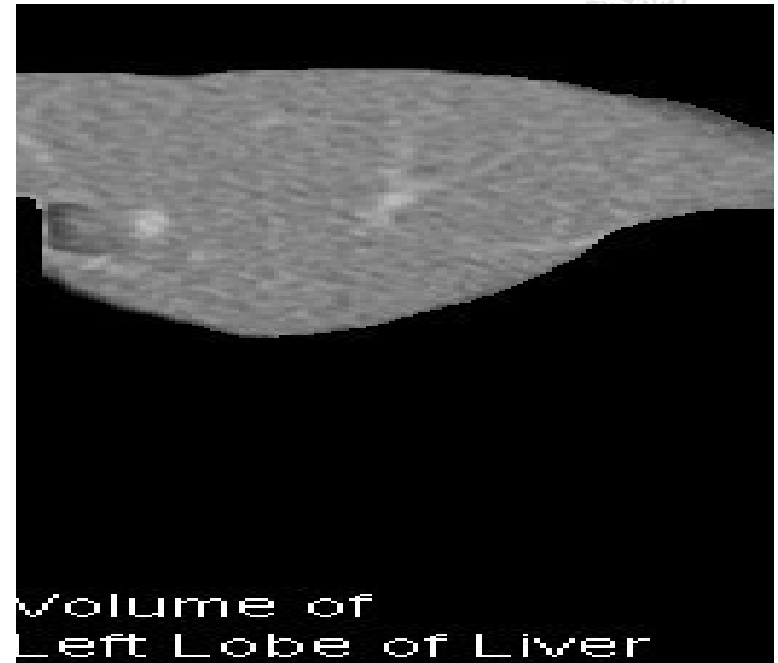
Post Right Portal Vein Embolisation

- Right hepatic lobe measures 492.3 cc (44.1%).
- Left hepatic lobe measures 623.6 cc

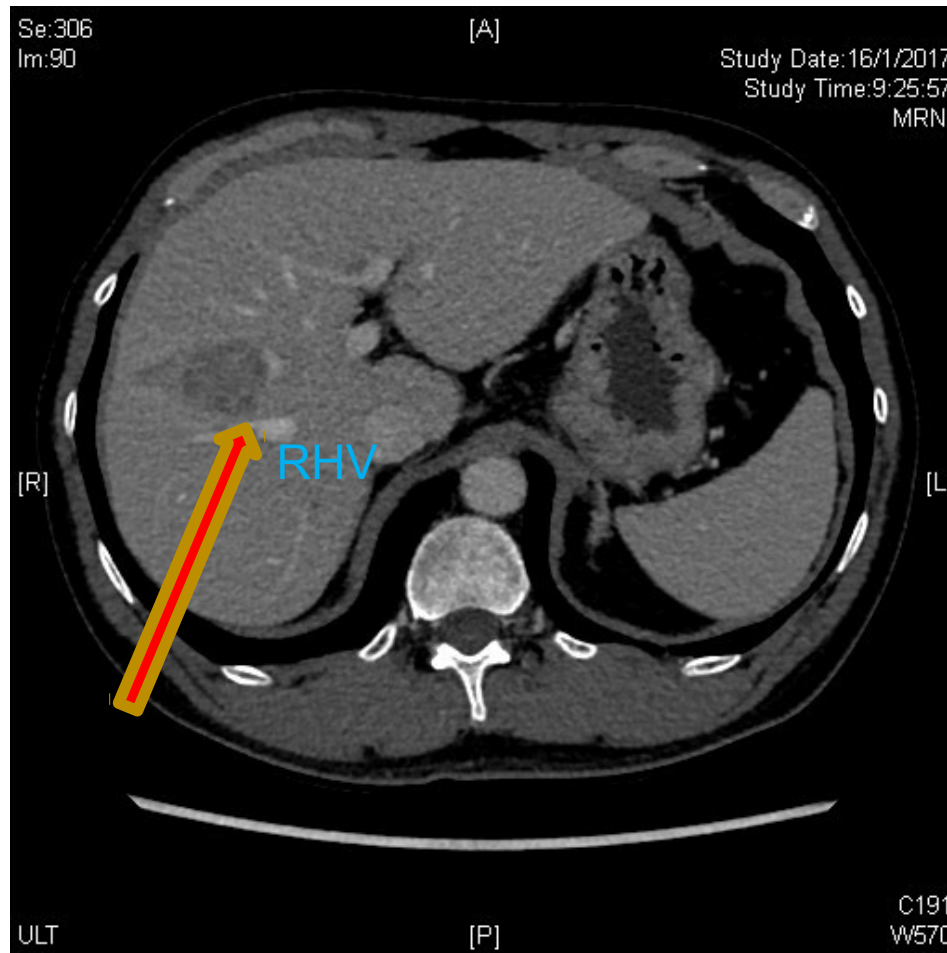
Progress

- INR peaked at Day 5 1.47
- Home by Day 7
- Well differentiated HCC
- No vascular invasion

CT volumetry



CT volumetry



Treatment Options

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