

Update on the National HPB Audit

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Iain C Cameron



Initial Steps

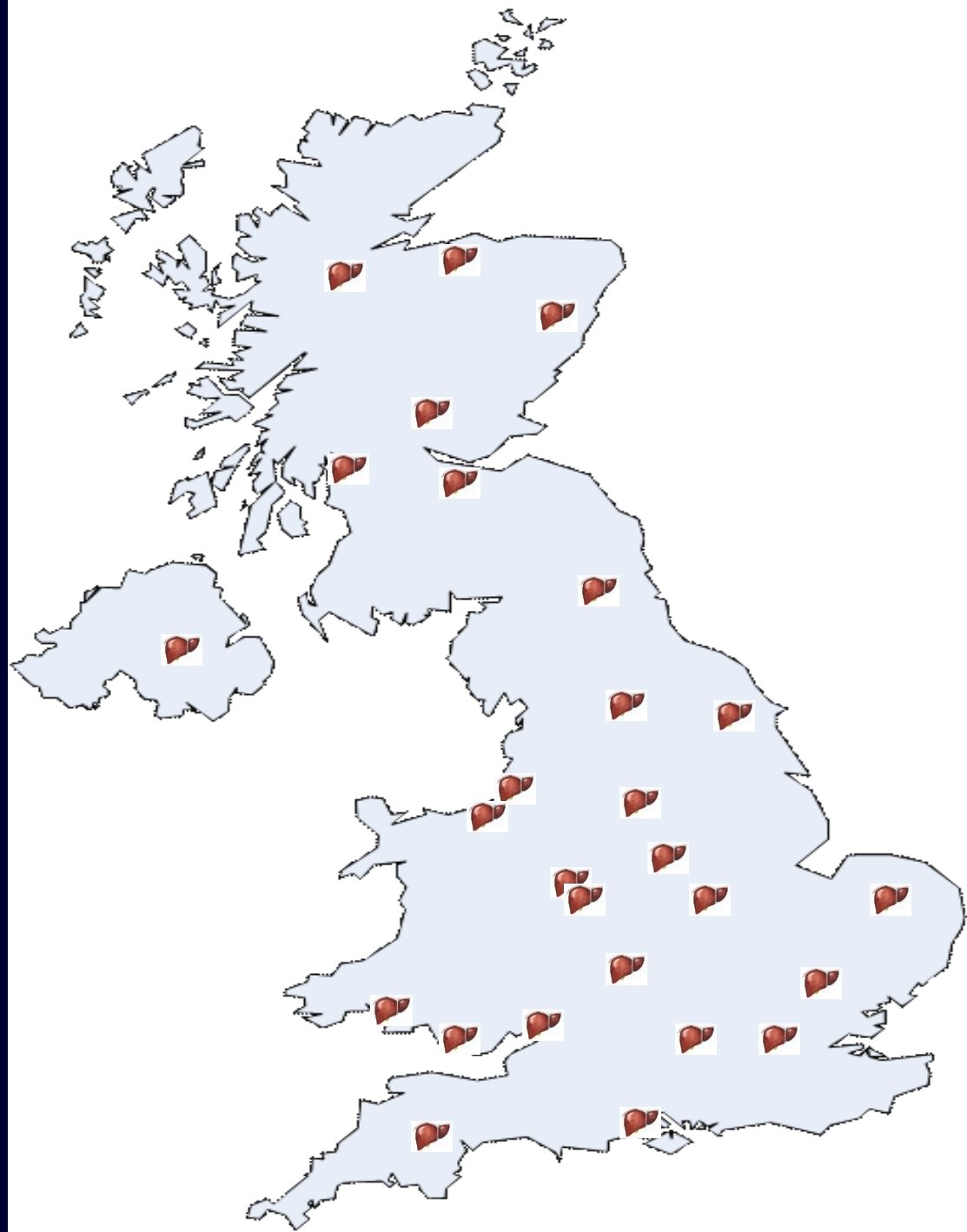
- 2007 - Expressions of interest sought from HPB surgeons by AUGIS Council
- Series of Meetings
- Agreed - Audit of HPB cancer resections
- Data fields agreed – Liver, Pancreatic, Biliary
- External Funding secured for 3 years

Initial setup

- National HPB Audit launched AUGIS meeting Nottingham September 2009
- Initial coordination by Jill Cooke (CNS)
- All centres asked to participate - voluntary
- Username and passwords issued
- Online data entry - co-ordinated by Ardeo

HPB Units in UK

Basingstoke
Birmingham
Blackburn
Bristol
Cambridge
Coventry
Hull
Leeds
Leicester
Liverpool
London 5 centres
Manchester
Newcastle
Norwich
Nottingham
Oxford
Plymouth
Sheffield
Southampton
Stoke
Aberdeen
Dundee
Edinburgh
Glasgow
Cardiff
Swansea
Belfast



Sign On Screen

Ardeo eMDT Login - Mozilla Firefox

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AUGIS HPB Audit



Welcome to the AUGIS HPB cancer resection database.
This database has been developed to coordinate national data collection for HPB cancer resections and I am very grateful for the input and support provided by Professor John Buckels and Mr Iain Cameron. The datafields were agreed following an extensive literature review which identified those factors shown to influence outcome and only these datafields have been included in the dataset. The format is simple and is designed to be user friendly and it should only take a few minutes to complete the data entry.

Over time we hope to expand the dataset to include all HPB patients but currently I would encourage you to enter your cancer resection data so that we, as a professional body, take a lead in national data collection.

David Berry

Consultant HPB Surgeon & Head of AUGIS Audit Committee

Fenella Welsh

Consultant HPB Surgeon & Lead Collaborator

Peter Kuramapu

CEO (Ardeo)

George Kuramapu

Chair of AUGIS Audit Committee (Ardeo)

Login

Username

Password

Login

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AUGIS

www.augis.org

Developed By:



www.ardeo.com

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eMDT - Edit Form - Mozilla Firefox

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System Data Entry eMDT Meetings Calendar Exit

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Data Entry

Find Patient
Create Patient

Current Patient

Forename: 01
Surname: 01
Sex: 0
Age: 0002
NHS No.: 0002

Patient Details
Patient History
Close Patient

Forms

--HPB Forms--
Resection For Liver
Resection For Pancreatic Cancer
Resection For Biliary Cancer

HPB Audit
Export for HPB Audit

Resection For Liver

Patient Details & Diagnosis / Staging

Hospital:

Date Of Admission:

Date Of Operation:

Date Of Discharge:

BMI:

Diagnosis / Staging

Ultrasound: ☐ yes ☐ no

CT: ☐ yes ☐ no

MRI: ☐ yes ☐ no

MRCP: ☐ yes ☐ no

Laparoscopy +/- Intraoperative Ultrasound: ☐ yes ☐ no

PET: ☐ yes ☐ no

Tumour Markers & ECOG (WHO) Performance Status

CEA: ☐ Normal ☐ Raised ☐ Not Done

Beta HCG: ☐ Normal ☐ Raised ☐ Not Done

Alpha Fetoprotein: ☐ Normal ☐ Raised ☐ Not Done

CA19-9: ☐ Normal ☐ Raised ☐ Not Done

ECOG (WHO) Performance Status

Performance Status: ☐ 0-Fully active
☐ 1-Light/office work
☐ 2-Ambulatory/self care, up & about >50% of the time
☐ 3-Limited self care, confined to bed/chair >50% waking hours
☐ 4-Completely disabled

Comorbidities (please tick all that are appropriate)

Comorbidities

☐ None
☐ Cardiovascular disease
☐ Chronic renal impairment
☐ Cerebro/periph vascular
☐ Chronic respiratory disease (inc. COPD/asthma)
☐ Liver failure or cirrhosis
☐ Diabetes
☐ Mental illness
☐ Other significant condition

Cirrhosis-Childs Pugh: ☐ A ☐ B ☐ C ☐ N/A

Portal hypertension: ☐ yes ☐ no

Known hepatitis: ☐ yes ☐ no

Preoperative Variables

Pre-operative chemotherapy: ☐ yes ☐ no

Pre-operative chemoembolization: ☐ yes ☐ no

Preoperative portal vein embolisation: ☐ yes ☐ no

Preoperative jaundice and intervention

Jaundice: ☐ yes ☐ no

Duration (days):

Preoperative cholangitis: ☐ yes ☐ no

Preoperative biliary drainage: ☐ yes ☐ no

ERCP: ☐ yes ☐ no

Antegrade stent: ☐ yes ☐ no

PTC and drain: ☐ yes ☐ no

Number of times attempted:

Interval between jaundice and stenting (days):

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Print Cancel Save

Resection For Liver Page 2

Find Patient

Create Patient

Current Patient

Forename:

Surname: 01

Sex:

Age: 0

NHS No.: 0002

Patient Details

Patient History

Close Patient

Forms

--HPB Forms--

Resection For Liver

Resection For Pancreatic Cancer

Resection For Biliary Cancer

HPB Audit

Export for HPB Audit

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Data Entry

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Resection For Liver

Operation

Consultant

Primary Operator

Assistant

Trainee

Primary Operator

Assistant

Fitness for Surgery ASA grade

1

2

3

4

5

Number Of Tumours

Number of Involved Segments

Resection

Anatomical Resection

Minor (<3 segments)

Major (3 or more segments)

Extended (>4 segments or equivalent-contiguous or non-contiguous)

Segmental Resection

yes

no

Total Number of Segments Resected

Local Resection

yes

no

Total Number of Local Resections

Surgical access(abdominal)-please indicate approach used for the operation

Open

Laparoscopic

Laparoscopic converted to open

Operation (page 2 of 3)

Operation

Continued

Vascular resection - IVC/PV

yes

no

Additional extrahepatic procedure

yes

no

- (excluding cholecystectomy)

Pringle

yes

no

Pringle total time (mins)

Glue / Haemostat

yes

no

Operation Duration (mins)

Intraoperative Blood loss (mls)

Intraoperative blood transfusion - units

Total Blood Transfusion - Units

Operation

Print

Cancel

Save

Ignore filters

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Outcome Mortality And Morbidity And Post Op Pathology And Histology (page 3 of 3) Outcome Mortality An...

Data Entry

Find Patient
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Forename:
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--HPB Forms--
Resection For Liver
Resection For Pancreatic Cancer
Resection For Biliary Cancer

HPB Audit

Export for HPB Audit

Resection For Liver

Outcome Mortality And Morbidity

Mortality

Date Of Death

In hospital Mortality ☐ yes ☐ no

30 Day Mortality ☐ yes ☐ no

60 Day Mortality ☐ yes ☐ no

90 Day Mortality ☐ yes ☐ no

Morbidity

Major Complications (Requires intervention/admit to ITU)

☐ None
☐ Bile leak
☐ Bleed
☐ Return to theatre
☐ Liver failure
☐ Percutaneous drainage of collection
☐ Anastomotic leak requiring return to theatre
☐ Other

Minor ☐ None ☐ Wound infection ☐ Chest infection ☐ Urinary infection

Post Op Pathology And Histology

Tumour Type ☐ Colorectal mets ☐ HCC ☐ Intrahepatic cholangiocarcinoma ☐ Other cancer

Other Cancer ☐ Breast ☐ Renal ☐ Neuroendocrine ☐ Other

Resection Type ☐ R0 ☐ R1

Chronic liver disease ☐ yes ☐ no

Steatosis ☐ yes ☐ no

Hepatitis ☐ yes ☐ no

Steatohepatitis ☐ yes ☐ no

Sinusoidal Obstruction ☐ yes ☐ no

Largest tumour size (mm)

Outcome Mortality An... Print Cancel Save

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After 3 years – August 2012

- Total of 4834 patients entered onto database
 - 2316 colorectal liver metastasis resections
 - 584 other liver tumour resections
 - 1736 pancreatic tumour resections
 - 198 biliary cancer resections

Problems with the data

- Some centres did not participate
- Many centres did not enter all cases
- Many data fields left blank
- Interpretation of the data is difficult
- Typical example

Preoperative investigations – pancreatic resections (n=1736)

Preoperative Investigation	Number with a recorded answer	Number who had investigation	Percentage Recorded	Total
Ultrasound	979	666	68.0	38.36
CT scan	1077	1050	97.5	60.48
MRI	899	165	18.35	9.5
MRCP	883	145	16.42	8.35
Laparoscopy	882	136	15.42	7.83
PET	896	78	8.71	4.49
EUS	1041	416	39.96	23.96
Missing	-	573		33.01

Having said that....

Basic demographics

Resection	Male (%)	Age	No. Resections per centre	LOS	BMI
Colorectal LM	63.47	66 (24-90)	66 (1-434)	8 (1-449)	27 (15-54)
Other liver	52.91	64 (18-87)	18 (1-106)	9 (1-379)	27 (15-51)
Pancreatic	52.76	65 (18-86)	55 (1-279)	14 (1-753)	26 (15-50)
Biliary tract	47.98	66 (30-83)	5 (1-52)	11 (1-286)	25 (15-43)

Who is the primary operator?

Resection	Consultant (%)	Trainee (%)	Missing (%)
Colorectal LMs	81.78	16.58	1.64
Other liver tumours	85.96	12.84	1.2
Pancreatic resections	74.2	19.9	6.9
Biliary cancers	87.37	10.61	2.02

Surgical Approach

Resection	Open (%)	Laparoscopic (%)	Lap to open (%)	Missing (%)
Colorectal LM	81.69	6.78	1.6	9.93
Other liver	75.17	13.18	2.23	9.42
Pancreaticoduodenectomy	86.21	0.65	0.41	12.73
Distal pancreatectomy	63.19	28.84	4.30	3.07
Total pancreatectomy	84.62	-	-	15.38
Biliary cancer	90.91	3.54	0.51	5.05

Operative details

Resection	Median op time (range)	No. of cases with recorded blood loss (%)	Median blood loss (range)
Colorectal LM	180 (15-595)	1379/2316 (59.5%)	215 (0-5200)
Other liver tumours	200 (30-780)	295/584 (50.5%)	200 (0-4500)
Pancreatoduodenectomy	345 (72-3610)	436/1233 (35.7%)	400 (0-4460)
Distal pancreatectomy	215 (0-540)	127/326 (38.9%)	300 (0-4000)
Total pancreatectomy	360 (41-695)	37/91 (40.7%)	600 (0-2800)

Effect of preoperative chemotherapy

Major complication	Preoperative chemotherapy (n=1230)	No (n=929) preoperative chemotherapy
Bile leak	44 (3.58%)	30 (3.23%)
Bleed	8 (0.65%)	10 (1.08%)
Return to theatre	11 (0.89%)	11 (1.18%)
Liver failure	28 (2.28%)	14 (1.51)
Percutaneous drain	27 (2.20%)	18 (1.94)
Major complications	9.68%	8.94%

R0 : R1 resection rate

Resection	R0 (%)	R1 (%)	Missing (%)
Colorectal liver metastases	71.98	16.11	11.91
Other liver tumours	62.33	17.98	19.69
Pancreatic ductal adenocarcinoma	44.09	44.67	11.24
Other pancreatic	68.43	12.02	19.55
Biliary cancers	41.41	30.81	27.78

Pancreatic histology

Post resection histology	Number	Percentage
Ductal adenocarcinoma	703	40.5
Cystic adenocarcinoma	8	0.46
Ampullary tumour	159	9.16
Duodenal Cancer	67	3.86
Other	390	22.47
Missing	409	23.56

Pancreatic ductal adenocarcinoma

T Stage	Number	Percentage
1	20	2.84
2	44	6.26
3	544	77.38
4	35	4.98
Missing	60	8.53
N Stage		
0	121	17.21
1	516	73.4
2	5	3.7
Missing	61	8.68

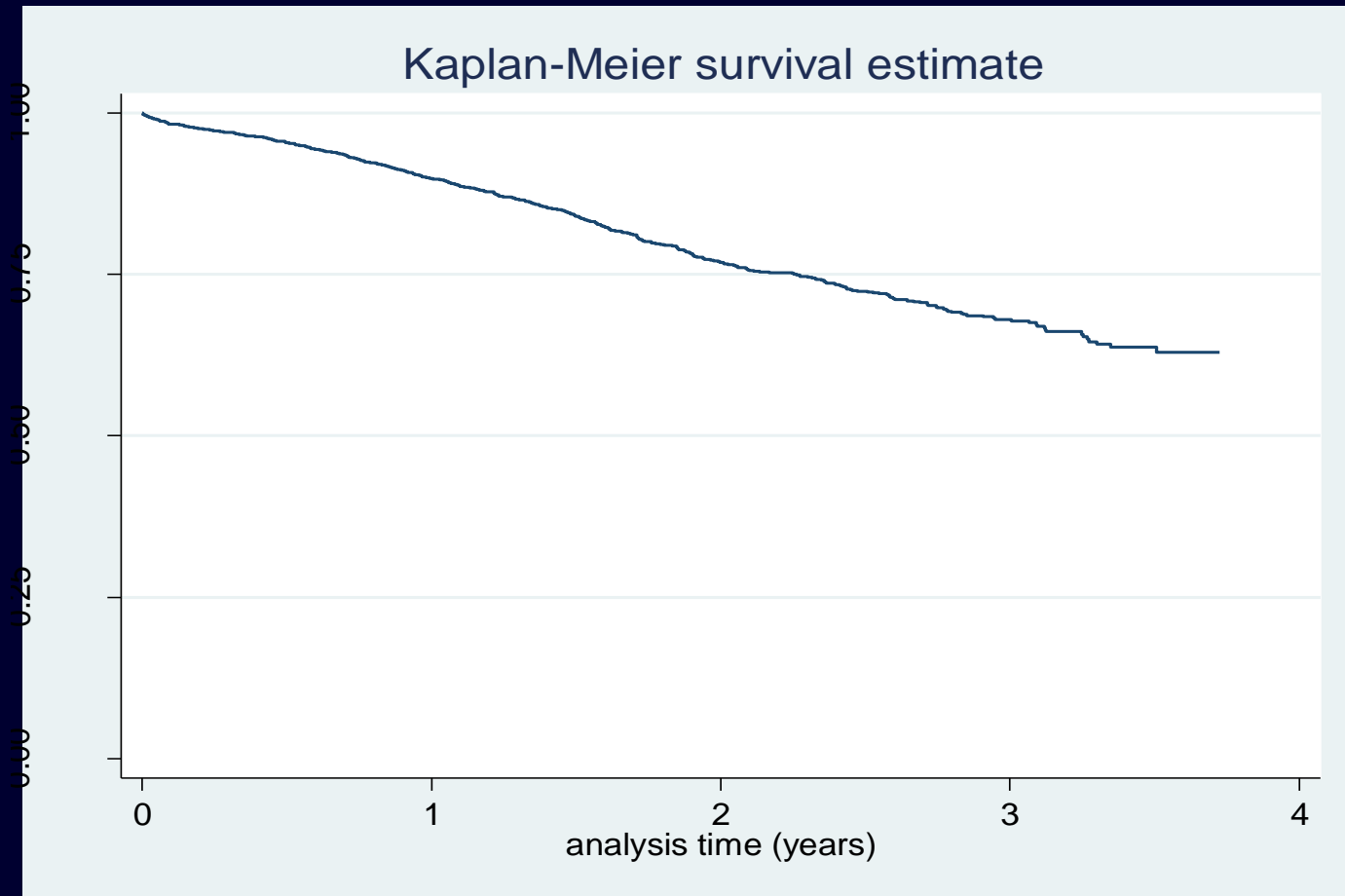
Biliary Tract Cancers

Tumour	Number	Percentage
Hilar cholangiocarcinoma	60	30.3
Mid CBD tumour	30	15.15
Distal CBD tumour	42	21.21
Gallbladder cancer	33	16.67

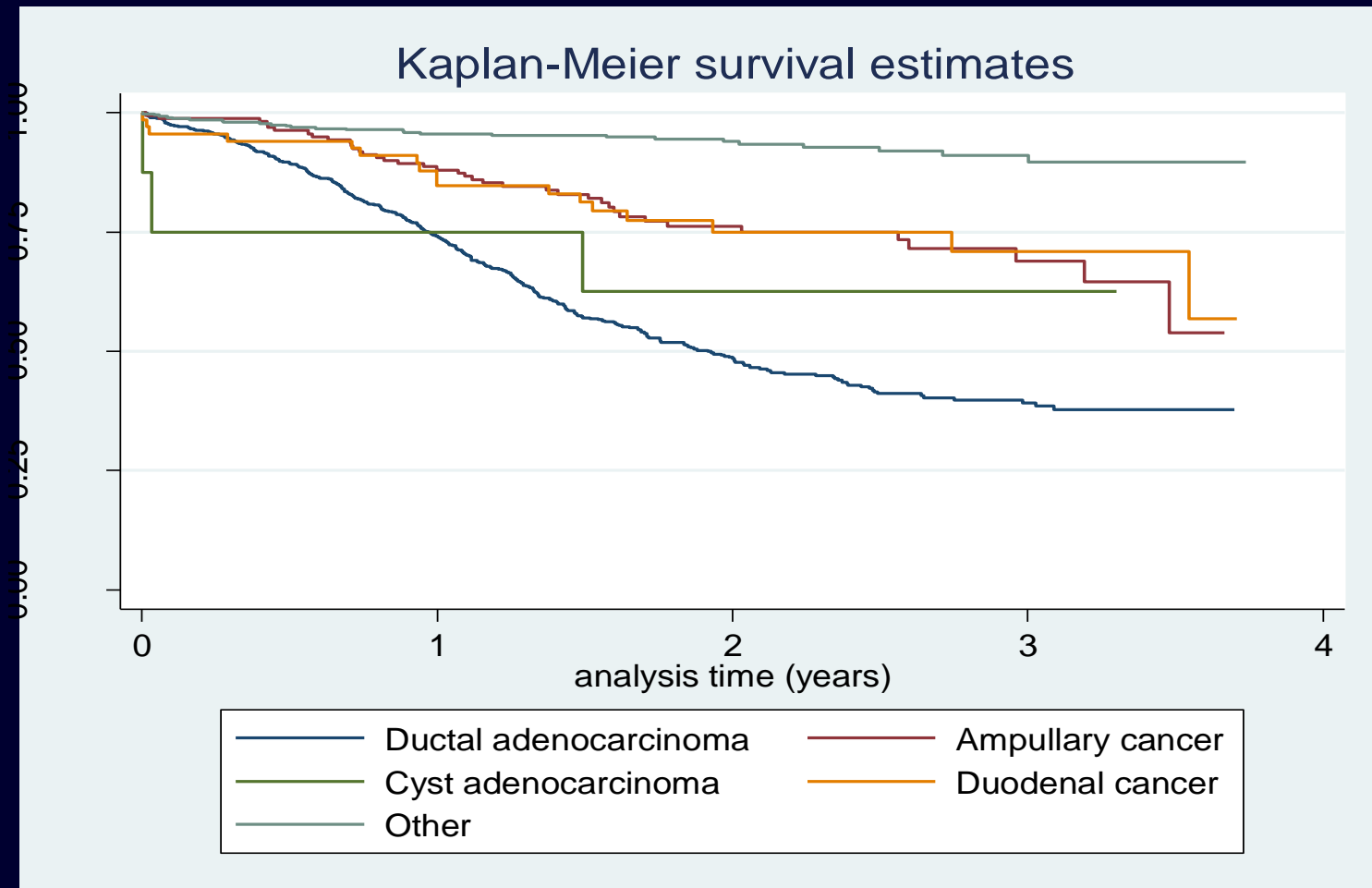
In hospital mortality

Resection type	Number of deaths in hospital	Percentage
Colorectal liver metastases	46	1.99
Other liver tumours	12	2.05
Pancreatic resections	22	1.78
Biliary cancers	16	8.08

Kaplan Meier - CRLM



Kaplan-Meier - Pancreas



Where do we go from here?

- Requirement for accurate data collection
- Part of new commissioning guidance
- Surgeons accountable for individual results

Risk assessment in liver surgery

- Needs to take account of
 - Procedure
 - Patient fitness
 - Liver function and parenchymal abnormality

Risk assessment in pancreatic surgery

- Needs to take account of
 - Procedure
 - Patient fitness
 - Pancreatic factors - consistency, duct diameter

National HPB database the future

- New comprehensive database – all patients
 - Surgical
 - Non-surgical
- Incorporate all factors which might affect mortality and morbidity
- Must link to existing NHS systems

Conclusion

- There is a need to design and validate a robust and nationally acceptable risk prediction tool incorporating all relevant patient, disease and surgeon related factors in order to assist HPB surgeons to predict their individual and patient outcomes.
- This will also help to standardise the preoperative risk stratification, patient counselling during informed consent and for tailoring of peri-operative care

Acknowledgements

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