

UK National Liver Histopathology EQA Scheme

Circulation L23_A

Case Response Analysis

A meeting of the UKLPG quality subcommittee / EQA steering committee took place on 22.6.23. Responses were collated using the below data (as provided directly from EQA lite) and with additional access to the data as a spreadsheet which includes the free text comments box.

Points of consensus are identified from the dropdown menus in the first instance for tumour, pattern, stage and diagnosis. Consensus might be for one response *alone* in tumour, pattern and diagnosis sections. If necessary responses are combined to reach consensus or this is sought from free text comments.

94 responses are detailed in this document, in the spreadsheet there are 97 responses, 77 needed for consensus (80%).

Collators propose what is an appropriate response/which consensus points should be included for 10 marks and how many marks are lost for being out of consensus. Please see summaries below in blue.

Cases will be discussed in a virtual meeting on 4.7.23. After this agreed scoring criteria are applied to responses, at this point the whole of the response including the comments box is accounted for.

This document gives information on individual cases in circulation L23_A of this scheme. It contains no personal details of participants.

Case Number: L23_A1

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 77. Cholestatic jaundice. No biliary obstruction on CT/MRCP. Recent co-amoxiclav. Viral serology and autoantibodies negative.

Specimen: Liver biopsy - medical

Macroscopic: 18mm core

Immunohistochemistry: retic, PSR, PAS

Original Diagnosis: Drug induced liver injury

Tumour:	Popularity:
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- No tumour/lesion present	100.0%
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Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		90
- No tumour/lesion present	- No tumour/lesion present	4

Pattern:	Popularity:
cholestasis, bilirubinostasis	85.1%
steatohepatitis	48.9%
steatosis	31.9%
lobular hepatitis	14.9%
chronic hepatitis	4.3%
Other (please specify in Comments)	4.3%

Pattern 1:	Pattern 2:	Count:
cholestasis, bilirubinostasis	steatohepatitis	34
cholestasis, bilirubinostasis	steatosis	22
steatohepatitis	cholestasis, bilirubinostasis	7
lobular hepatitis	cholestasis, bilirubinostasis	5
lobular hepatitis	steatosis	4
cholestasis, bilirubinostasis	lobular hepatitis	4
cholestasis, bilirubinostasis		3
steatohepatitis		3
cholestasis, bilirubinostasis	chronic hepatitis	2
steatosis		1
chronic hepatitis	cholestasis, bilirubinostasis	1
Other (please specify in Comments)		1
		1
steatosis	cholestasis, bilirubinostasis	1
steatohepatitis	lobular hepatitis	1
cholestasis, bilirubinostasis	Other (please specify in Comments)	1
steatohepatitis	Other (please specify in Comments)	1
Other (please specify in Comments)	steatosis	1
chronic hepatitis	steatosis	1

Stages:	Popularity:
mild/early fibrosis without bridging	54.3%
fibrosis with bridging between vascular structures	36.2%
no fibrosis/equivocal fibrosis	4.3%
hepatocyte loss or bridging - favour collapse not fibrosis	2.1%
Other (please specify in Comments)	2.1%

Diagnostic categories:	Popularity:
drug induced liver injury (please specify in comments box)	90.4%
fatty liver disease - either alcohol or non-alcohol	60.6%
acute / subacute hepatitis - autoimmune / drug / viral	6.4%
fatty liver disease - non-alcohol related fatty liver disease	3.2%

fatty liver disease - alcohol related liver disease	1.1%
Other (please enter alternative diagnosis in comments box)	1.1%

Diagnosis Combination:	Count:
drug induced liver injury (please specify in comments box), fatty liver disease - either alcohol or non-alcohol	53
drug induced liver injury (please specify in comments box)	28
acute / subacute hepatitis - autoimmune / drug / viral, fatty liver disease - either alcohol or non-alcohol	3
drug induced liver injury (please specify in comments box), fatty liver disease - non-alcohol related fatty liver disease	3
acute / subacute hepatitis - autoimmune / drug / viral	2
[No selections made]	1
acute / subacute hepatitis - autoimmune / drug / viral, drug induced liver injury (please specify in comments box)	1
fatty liver disease - alcohol related liver disease	1
fatty liver disease - either alcohol or non-alcohol	1
Other (please enter alternative diagnosis in comments box)	1

Original report and further information (if any): Drug induced liver injury

Complete answer for 10 marks would include; DILI (no consensus for specifying co amoxiclav) and fatty liver disease in any form (steatosis or steatohepatitis in dropdown or fat mentioned in comment) somewhere in the response (accounts for the presence of some degree of fibrosis, no consensus for stage).

*If one missing from response lose 5
If both missing score 0 (n=0)*

Note; few mention it is ArLD like picture

Case Number: L23_A2

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 30. Previous autoimmune hepatitis. ?flare ?PSC. Currently cholestatic LFTs.

Specimen: Needle core biopsy

Macroscopic: 2 cores and a fragment

Immunohistochemistry: CK7, orcein, EVG stain

Original Diagnosis: Chronic cholangiopathy in keeping with PSC. No evidence of active AIH. Minimal portal fibrosis.

Tumour:	Popularity:
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- No tumour/lesion present	100.0%
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Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		91
- No tumour/lesion present	- No tumour/lesion present	3

Pattern:	Popularity:
chronic biliary disease	94.7%
chronic hepatitis	3.2%
Other (please specify in Comments)	3.2%
vascular disease	1.1%
not applicable	1.1%
cholestasis, bilirubinostasis	1.1%

Pattern 1:	Pattern 2:	Count:
chronic biliary disease		83
chronic biliary disease	Other (please specify in Comments)	2
chronic biliary disease	vascular disease	1
		1
cholestasis, bilirubinostasis		1
chronic hepatitis		1
not applicable		1
Other (please specify in Comments)		1
chronic biliary disease	chronic biliary disease	1
chronic hepatitis	chronic biliary disease	1
chronic biliary disease	chronic hepatitis	1

Stages:	Popularity:
mild/early fibrosis without bridging	62.8%
no fibrosis/equivocal fibrosis	33.0%
Other (please specify in Comments)	3.2%
not applicable / no special stains to assess architecture	1.1%

Diagnostic categories:	Popularity:
primary sclerosing cholangitis	96.8%
Other (please enter alternative diagnosis in comments box)	3.2%
chronic cholangiopathy NOS	2.1%
autoimmune hepatitis	2.1%
overlap syndrome	1.1%
drug induced liver injury (please specify in comments box)	1.1%

Diagnosis Combination:	Count:
primary sclerosing cholangitis	86
Other (please enter alternative diagnosis in comments box), primary sclerosing cholangitis	3
autoimmune hepatitis	1
autoimmune hepatitis, primary sclerosing cholangitis	1
chronic cholangiopathy NOS	1

chronic cholangiopathy NOS, drug induced liver injury (please specify in comments box)	1
overlap syndrome, primary sclerosing cholangitis	1

Original report and further information (if any): Chronic cholangiopathy in keeping with PSC. No evidence of active AIH. Minimal portal fibrosis.

Complete answer for 10 marks would include: PSC (consensus for PSC alone but accept consideration of 'overlap' unless only diagnosis) and no/equivocal or mild fibrosis.

*'not applicable' or 'other' with no mention of fibrotic stage in comments box lose 5
If diagnosis of AIH or 'overlap' alone lose 10*

Note; histology is not supportive of AIH component at the time of this biopsy.

Case Number: L23_A3

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 63. seronegative? acute liver failure but ascites and varices, drug induced liver injury?

Specimen: explant liver

Macroscopic: Liver 561g, cut surface brown with small yellow nodules.

Immunohistochemistry: HVG reticulin orcein

Original Diagnosis: Acute damage, submassive hepatic necrosis, cause uncertain from histology, DILI in differential but so are infections or even acute presentation AIH.

Tumour:	Popularity:
- No tumour/lesion present	98.9%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		90
- No tumour/lesion present	- No tumour/lesion present	3
		1

Pattern:	Popularity:
Other (please specify in Comments)	52.1%
lobular hepatitis	42.6%
cholestasis, bilirubinostasis	7.4%
not applicable	4.3%
chronic hepatitis	2.1%
steatohepatitis	1.1%

vascular disease	1.1%
steatosis	1.1%

Pattern 1:	Pattern 2:	Count:
Other (please specify in Comments)		40
lobular hepatitis		28
lobular hepatitis	cholestasis, bilirubinostasis	5
		3
lobular hepatitis	Other (please specify in Comments)	3
Other (please specify in Comments)	Other (please specify in Comments)	2
not applicable		2
cholestasis, bilirubinostasis		1
chronic hepatitis		1
Other (please specify in Comments)	steatosis	1
vascular disease		1
Other (please specify in Comments)	cholestasis, bilirubinostasis	1
lobular hepatitis	lobular hepatitis	1
not applicable	lobular hepatitis	1
steatohepatitis	lobular hepatitis	1
lobular hepatitis	not applicable	1
	Other (please specify in Comments)	1
chronic hepatitis	Other (please specify in Comments)	1

Stages:	Popularity:
hepatocyte loss or bridging - favour collapse not fibrosis	66.0%
no fibrosis/equivocal fibrosis	26.6%
advanced fibrosis with bridging and nodularity/cirrhosis	3.2%
mild/early fibrosis without bridging	2.1%
Other (please specify in Comments)	2.1%

Diagnostic categories:	Popularity:
acute / subacute hepatitis - autoimmune / drug / viral	66.0%
drug induced liver injury (please specify in comments box)	24.5%
Other (please enter alternative diagnosis in comments box)	11.7%
autoimmune hepatitis	3.2%
- histologically indeterminate for cause	3.2%

Diagnosis Combination:	Count:
acute / subacute hepatitis - autoimmune / drug / viral	55
drug induced liver injury (please specify in comments box)	16
Other (please enter alternative diagnosis in comments box)	5
acute / subacute hepatitis - autoimmune / drug / viral, drug induced liver injury (please specify in comments box)	4
- histologically indeterminate for cause	3
acute / subacute hepatitis - autoimmune / drug / viral, Other (please enter alternative diagnosis in comments box)	3
autoimmune hepatitis	3
drug induced liver injury (please specify in comments box), Other (please enter alternative diagnosis in comments box)	3

Original report and further information (if any): Acute damage, submassive hepatic necrosis, cause uncertain from histology, DILI in differential but so are infections or even acute presentation AIH.

Complete answer for 10 marks would include: any of (hepatocyte loss or bridging - favour collapse not fibrosis, no/equivocal fibrosis and mild fibrosis) and differentials for acute liver injury.

If advanced fibrosis/cirrhosis lose 10

Case Number: L23_A4

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 73. nausea and vomiting, jaundice, deranged LFTs +++ pruritis. Viral screen mostly negative, Hep E and leptospira awaited. ANA weakly +ve. Impression: acute hepatitis, ? cause.

Specimen: liver biopsy

Macroscopic: one core 20mm

Immunohistochemistry: CK7, APASD, masson trichrome

Original Diagnosis: cholestasis, exclude DILI. Originally no history of hepatotoxic drugs, but asked to recheck. From GP - course of flucloxacillin for finger infection 6 weeks before her presentation.

Tumour:	Popularity:
- No tumour/lesion present	98.9%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		90
- No tumour/lesion present	- No tumour/lesion present	3
		1

Pattern:	Popularity:
cholestasis, bilirubinostasis	78.7%
chronic biliary disease	22.3%
Other (please specify in Comments)	17.0%
chronic hepatitis	12.8%
lobular hepatitis	10.6%
not applicable	1.1%
abnormal, no pattern discernible	1.1%
vascular disease	1.1%

Pattern 1:	Pattern 2:	Count:
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cholestasis, bilirubinostasis		32
cholestasis, bilirubinostasis	Other (please specify in Comments)	12
chronic biliary disease		9
cholestasis, bilirubinostasis	chronic hepatitis	8
cholestasis, bilirubinostasis	lobular hepatitis	6
cholestasis, bilirubinostasis	chronic biliary disease	5
chronic biliary disease	cholestasis, bilirubinostasis	5
Other (please specify in Comments)		4
		3
lobular hepatitis	cholestasis, bilirubinostasis	2
chronic hepatitis	lobular hepatitis	2
chronic biliary disease	not applicable	1
chronic biliary disease	chronic hepatitis	1
cholestasis, bilirubinostasis	vascular disease	1
chronic hepatitis	cholestasis, bilirubinostasis	1
cholestasis, bilirubinostasis	abnormal, no pattern discernible	1
cholestasis, bilirubinostasis	cholestasis, bilirubinostasis	1

Stages:	Popularity:
mild/early fibrosis without bridging	50.0%
no fibrosis/equivocal fibrosis	26.6%
fibrosis with bridging between vascular structures	11.7%
Other (please specify in Comments)	7.4%
hepatocyte loss or bridging - favour collapse not fibrosis	2.1%
advanced fibrosis with bridging and nodularity/cirrhosis	1.1%
not applicable / no special stains to assess architecture	1.1%

Diagnostic categories:	Popularity:
drug induced liver injury (please specify in comments box)	22.3%
chronic cholangiopathy NOS	20.2%
Other (please enter alternative diagnosis in comments box)	19.1%
acute / subacute hepatitis - autoimmune / drug / viral	19.1%
primary biliary cholangitis	9.6%
- histologically indeterminate for cause	7.4%
non-hepatotropic - viral, bacterial, parasitic (please specify in comment box)	4.3%
autoimmune hepatitis	3.2%
chronic viral hepatitis (hepatotropic viruses - please specify in comments box)	3.2%
primary sclerosing cholangitis	1.1%
overlap syndrome	1.1%
vanishing bile duct syndrome	1.1%
ascending cholangitis	1.1%
large bile duct obstruction	1.1%
manifestation of systemic or extrahepatic disease (please specify in comments box)	1.1%

Diagnosis Combination:	Count:
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drug induced liver injury (please specify in comments box)	19
Other (please enter alternative diagnosis in comments box)	16
acute / subacute hepatitis - autoimmune / drug / viral	12
chronic cholangiopathy NOS	10
primary biliary cholangitis	8
- histologically indeterminate for cause	6
acute / subacute hepatitis - autoimmune / drug / viral, non-hepatotropic - viral, bacterial, parasitic (please specify in comment box)	2
autoimmune hepatitis	2
chronic viral hepatitis (hepatotropic viruses - please specify in comments box)	2
non-hepatotropic - viral, bacterial, parasitic (please specify in comment box)	2
[No selections made]	1
- histologically indeterminate for cause, chronic cholangiopathy NOS	1
acute / subacute hepatitis - autoimmune / drug / viral, chronic cholangiopathy NOS	1
acute / subacute hepatitis - autoimmune / drug / viral, chronic viral hepatitis (hepatotropic viruses - please specify in comments box)	1
acute / subacute hepatitis - autoimmune / drug / viral, drug induced liver injury (please specify in comments box)	1
acute / subacute hepatitis - autoimmune / drug / viral, Other (please enter alternative diagnosis in comments box)	1
ascending cholangitis, chronic cholangiopathy NOS	1
autoimmune hepatitis, chronic cholangiopathy NOS	1
chronic cholangiopathy NOS, drug induced liver injury (please specify in comments box)	1
chronic cholangiopathy NOS, Other (please enter alternative diagnosis in comments box)	1
chronic cholangiopathy NOS, overlap syndrome	1
chronic cholangiopathy NOS, primary biliary cholangitis	1
chronic cholangiopathy NOS, primary sclerosing cholangitis	1
large bile duct obstruction, manifestation of systemic or extrahepatic disease (please specify in comments box)	1
vanishing bile duct syndrome	1

Original report and further information (if any): cholestasis, exclude DILI. Originally no history of hepatotoxic drugs, but asked to recheck. From GP - course of flucloxacillin for finger infection 6 weeks before her presentation.

Not for scoring, could combine cholestasis/bilirubinostasis (does not quite meet consensus alone) and chronic biliary disease as patterns of injury for consensus but it's an acute pattern of injury and differentials so disparate not felt appropriate.

Good educational case ; DILI was not suggested in the differentials on the request form but this is a typical pattern of antibiotic related injury, including the bile duct damage and should prompt the pathologist to seek further history.

Case Number: L23_A5

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 63 yrs. Radiological diagnosis of cirrhosis without portal HTN. ? Cause ? NASH

Specimen: Liver biopsy

Macroscopic: Two tan cores measuring 25mm and 24mm, bisected at 20mm

Immunohistochemistry: sirius red, victoria blue

Original Diagnosis: Cirrhosis with autoimmune hepatitis, moderae activity

Tumour:	Popularity:
- No tumour/lesion present	97.9%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		88
- No tumour/lesion present	- No tumour/lesion present	4
		2

Pattern:	Popularity:
chronic hepatitis	70.2%
steatohepatitis	44.7%
steatosis	35.1%
lobular hepatitis	12.8%
Other (please specify in Comments)	2.1%
not applicable	1.1%
chronic biliary disease	1.1%

Pattern 1:	Pattern 2:	Count:
chronic hepatitis	steatosis	24
chronic hepatitis	steatohepatitis	14
steatohepatitis	chronic hepatitis	12
chronic hepatitis		11
steatohepatitis		10
lobular hepatitis	steatosis	4
steatohepatitis	lobular hepatitis	4
		3
steatosis	chronic hepatitis	3
lobular hepatitis		2
steatosis		1
chronic hepatitis	chronic biliary disease	1
lobular hepatitis	chronic hepatitis	1
steatosis	lobular hepatitis	1
steatohepatitis	not applicable	1
Other (please specify in Comments)	Other (please specify in Comments)	1
steatohepatitis	Other (please specify in Comments)	1

Stages:	Popularity:
advanced fibrosis with bridging and nodularity/cirrhosis	95.7%
fibrosis with bridging between vascular structures	2.1%

mild/early fibrosis without bridging	1.1%
Other (please specify in Comments)	1.1%

Diagnostic categories:	Popularity:
autoimmune hepatitis	57.4%
fatty liver disease - either alcohol or non-alcohol	50.0%
fatty liver disease - non-alcohol related fatty liver disease	23.4%
Other (please enter alternative diagnosis in comments box)	10.6%
- histologically indeterminate for cause	4.3%
overlap syndrome	3.2%
acute / subacute hepatitis - autoimmune / drug / viral	2.1%
chronic cholangiopathy NOS	1.1%

Diagnosis Combination:	Count:
autoimmune hepatitis, fatty liver disease - either alcohol or non-alcohol	25
autoimmune hepatitis	17
fatty liver disease - either alcohol or non-alcohol	12
autoimmune hepatitis, fatty liver disease - non-alcohol related fatty liver disease	10
fatty liver disease - non-alcohol related fatty liver disease	10
fatty liver disease - either alcohol or non-alcohol, Other (please enter alternative diagnosis in comments box)	7
- histologically indeterminate for cause	3
fatty liver disease - non-alcohol related fatty liver disease, Other (please enter alternative diagnosis in comments box)	2
- histologically indeterminate for cause, fatty liver disease - either alcohol or non-alcohol	1
acute / subacute hepatitis - autoimmune / drug / viral	1
acute / subacute hepatitis - autoimmune / drug / viral, fatty liver disease - either alcohol or non-alcohol	1
autoimmune hepatitis, chronic cholangiopathy NOS	1
autoimmune hepatitis, overlap syndrome	1
fatty liver disease - either alcohol or non-alcohol, overlap syndrome	1
Other (please enter alternative diagnosis in comments box)	1
overlap syndrome	1

Original report and further information (if any): Cirrhosis with autoimmune hepatitis, moderate activity

Complete answer for 10 marks would include: advanced fibrosis and AIH either selected from dropdown or considered in comments box (using broad criteria there is consensus for this) and mention of fat in any form.

If one of these missing from response lose 5

We will be asking members to vote on this scoring proposal, strong consensus for stage – score on this alone? Committee felt probably not.

52 choose AIH +/- fatty liver disease (marked in yellow above) 27 more consider AIH specifically in the comments box or imply there is a hepatic pattern with plasma cells which requires further

investigation n=79 . This gives consensus, is this acceptable? It does include some responders who considered an acute pattern of injury or a biliary component.

There is a consensus for mention of fat somewhere in the response, is it appropriate to do this?

Should this be a non scoring case?

At the meeting 4/7/23 members voted to score this case and to use the criteria as proposed above and highlighted.

Case Number: L23_A6

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 31 yrs. Laparoscopic segment 6 + 7 excision of hepatic adenoma.

Specimen: Segment 6/7 resection

Macroscopic: Segmental excision 125 x 74 x 50 mm, weighing 143g. Single lesion 25 x 24 x 25 mm with central degeneration and tan coloured. Close to the resection margin.

Immunohistochemistry: SMA, HMB45, MelanA included. CD117 patchily positive. DOG1 weak cytoplasmic staining in more epithelioid nodules. Ki67

Original Diagnosis: Angiomyolipoma, predominantly smooth muscle. Can resemble hepatocellular adenoma radiologically.

Tumour:	Popularity:
angiomyolipoma	92.6%
Other (please specify in Comments)	6.4%
metastasis (further comment in Comments)	2.1%
- No tumour/lesion present	1.1%

Tumour 1:	Tumour 2:	Count:
angiomyolipoma		83
Other (please specify in Comments)		6
angiomyolipoma	angiomyolipoma	2
angiomyolipoma	metastasis (further comment in Comments)	1
angiomyolipoma	- No tumour/lesion present	1
metastasis (further comment in Comments)		1

Pattern:	Popularity:
within normal limits	75.5%
not applicable	8.5%
Other (please specify in Comments)	4.3%
cholestasis, bilirubinostasis	2.1%

Pattern 1:	Pattern 2:	Count:
within normal limits		71
		9

not applicable		7
Other (please specify in Comments)		4
cholestasis, bilirubinostasis		1
cholestasis, bilirubinostasis	cholestasis, bilirubinostasis	1
not applicable	not applicable	1

Stages:	Popularity:
not applicable / no special stains to assess architecture	55.3%
no fibrosis/equivocal fibrosis	26.6%

Diagnostic categories:	Popularity:
- no evidence of diffuse/background liver disease	33.0%
Other (please enter alternative diagnosis in comments box)	7.4%
- not applicable (insufficient non-lesional tissue)	3.2%

Diagnosis Combination:	Count:
[No selections made]	54
- no evidence of diffuse/background liver disease	30
Other (please enter alternative diagnosis in comments box)	7
- not applicable (insufficient non-lesional tissue)	2
- no evidence of diffuse/background liver disease, - not applicable (insufficient non-lesional tissue)	1

Original report and further information (if any): Angiomyolipoma, predominantly smooth muscle. Can resemble hepatocellular adenoma radiologically.

Complete answer for 10 marks would include: angiomyolipoma. No meaningful consensus regarding background liver. Allow 'pecoma'.

If considering a DD with a panel that would lead to correct diagnosis lose 5 (please note 2 menus are not for expressing a differential, if you choose from both you are implying 2 different tumours are present).

If diagnosis of another entity lose 10

Case Number: L23_A7

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Male 28. On max AZT dose. Elevated ALT ?fibrosis ?inflammation. Further information from EPR: AIH diagnosed 2014 (acute severe presentation, elevated IgG and SMA+). Deranged LFTs following covid infection, Dec 2021. Elevated Immunoglobulins. Intensified immunosuppression. Fibroscan 26.1 kPa (May 22), increased from 11.1 kPa (July 21). Medications - Azathioprine 200mg OD, Prednisolone 10mg, Omeprazole. LFTs at time of biopsy: ALT 163, AlkPhos 176, Bili 23. Recent Immunoglobulins had normal IgG.

Specimen: Medical Liver biopsy

Macroscopic: One core of tissue 18mm

Immunohistochemistry: None provided

Original Diagnosis: Veno-occlusive disease - secondary to chronic azathioprine toxicity. Outflow obstruction excluded on imaging.

Tumour:	Popularity:
- No tumour/lesion present	94.7%
Other (please specify in Comments)	2.1%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		86
		3
- No tumour/lesion present	- No tumour/lesion present	3
Other (please specify in Comments)		2

Pattern:	Popularity:
acute venous outflow obstruction	43.6%
vascular disease	42.6%
Other (please specify in Comments)	17.0%
chronic hepatitis	7.4%
chronic biliary disease	6.4%
not applicable	2.1%
lobular hepatitis	1.1%
steatosis	1.1%

Pattern 1:	Pattern 2:	Count:
vascular disease		30
acute venous outflow obstruction		28
Other (please specify in Comments)		10
vascular disease	Other (please specify in Comments)	3
acute venous outflow obstruction	chronic hepatitis	3
acute venous outflow obstruction	vascular disease	3
chronic hepatitis	chronic biliary disease	2
vascular disease	chronic hepatitis	1
vascular disease	lobular hepatitis	1
acute venous outflow obstruction	not applicable	1
acute venous outflow obstruction	Other (please specify in Comments)	1
chronic biliary disease	Other (please specify in Comments)	1
vascular disease	steatosis	1
		1
chronic biliary disease		1
chronic hepatitis		1
not applicable		1
acute venous outflow obstruction	acute venous outflow obstruction	1
chronic biliary disease	acute venous outflow obstruction	1
Other (please specify in Comments)	acute venous outflow obstruction	1
vascular disease	acute venous outflow obstruction	1
acute venous outflow obstruction	chronic biliary disease	1

Stages:	Popularity:
not applicable / no special stains to assess architecture	68.1%
no fibrosis/equivocal fibrosis	14.9%
subtle architectural abnormalities, vascular disease	7.4%
mild/early fibrosis without bridging	4.3%
fibrosis with bridging between vascular structures	2.1%

Diagnostic categories:	Popularity:
Other (please enter alternative diagnosis in comments box)	46.8%
drug induced liver injury (please specify in comments box)	39.4%
manifestation of systemic or extrahepatic disease (please specify in comments box)	10.6%
prothrombotic disorder (please specify in comments box)	6.4%
autoimmune hepatitis	4.3%
primary sclerosing cholangitis	4.3%
fatty liver disease - either alcohol or non-alcohol	1.1%
acute / subacute hepatitis - autoimmune / drug / viral	1.1%

Diagnosis Combination:	Count:
Other (please enter alternative diagnosis in comments box)	37
drug induced liver injury (please specify in comments box)	26
manifestation of systemic or extrahepatic disease (please specify in comments box)	5
drug induced liver injury (please specify in comments box), Other (please enter alternative diagnosis in comments box)	4
[No selections made]	3
drug induced liver injury (please specify in comments box), manifestation of systemic or extrahepatic disease (please specify in comments box)	3
prothrombotic disorder (please specify in comments box)	3
autoimmune hepatitis, Other (please enter alternative diagnosis in comments box)	2
manifestation of systemic or extrahepatic disease (please specify in comments box), prothrombotic disorder (please specify in comments box)	2
primary sclerosing cholangitis	2
acute / subacute hepatitis - autoimmune / drug / viral	1
autoimmune hepatitis	1
autoimmune hepatitis, drug induced liver injury (please specify in comments box)	1
drug induced liver injury (please specify in comments box), fatty liver disease - either alcohol or non-alcohol	1
drug induced liver injury (please specify in comments box), primary sclerosing cholangitis	1
drug induced liver injury (please specify in comments box), prothrombotic disorder (please specify in comments box)	1
Other (please enter alternative diagnosis in comments box), primary sclerosing cholangitis	1

Original report and further information (if any): Veno-occlusive disease - secondary to chronic azathioprine toxicity. Outflow obstruction excluded on imaging.

Complete answer for 10 marks would include: recognition of a vascular pattern of injury somewhere in the response (vascular disease or acute venous outflow obstruction plus those describing this in comments reaches consensus). DILI/azathioprine does not reach consensus.

If only diagnosis of another condition e.g.PSC lose 10

Case Number: L23_A8

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 55. Drinks 11-24 units of alcohol per day. Obesity, polygenic hypercholesterolaemia. High Fibroscan score.

Specimen: Needle biopsy

Macroscopic: A single core of liver 24mm in length

Immunohistochemistry: van Gieson

Original Diagnosis: Steatohepatitis. Cannot be sure if alcoholic or non-alcoholic. Bridging fibrosis (cirrhotic on imaging).

Tumour:	Popularity:
- No tumour/lesion present	96.8%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		88
- No tumour/lesion present	- No tumour/lesion present	3
		3

Pattern:	Popularity:
steatohepatitis	91.5%
steatosis	10.6%
lobular hepatitis	4.3%
not applicable	2.1%
chronic hepatitis	1.1%
Other (please specify in Comments)	1.1%

Pattern 1:	Pattern 2:	Count:
steatohepatitis		76
steatosis		3
steatosis	lobular hepatitis	2
steatohepatitis	not applicable	2
steatosis	steatohepatitis	2
		2
steatohepatitis	steatosis	2
lobular hepatitis	steatosis	1
steatohepatitis	Other (please specify in Comments)	1
steatohepatitis	steatohepatitis	1
steatohepatitis	chronic hepatitis	1

steatohepatitis	lobular hepatitis	1
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Stages:	Popularity:
advanced fibrosis with bridging and nodularity/cirrhosis	55.3%
fibrosis with bridging between vascular structures	44.7%

Diagnostic categories:	Popularity:
fatty liver disease - either alcohol or non-alcohol	73.4%
fatty liver disease - alcohol related liver disease	25.5%
fatty liver disease - non-alcohol related fatty liver disease	4.3%
Other (please enter alternative diagnosis in comments box)	3.2%
- histologically indeterminate for cause	1.1%

Diagnosis Combination:	Count:
fatty liver disease - either alcohol or non-alcohol	67
fatty liver disease - alcohol related liver disease	18
fatty liver disease - alcohol related liver disease, fatty liver disease - non-alcohol related fatty liver disease	3
- histologically indeterminate for cause, fatty liver disease - alcohol related liver disease	1
fatty liver disease - alcohol related liver disease, fatty liver disease - either alcohol or non-alcohol	1
fatty liver disease - alcohol related liver disease, Other (please enter alternative diagnosis in comments box)	1
fatty liver disease - either alcohol or non-alcohol, Other (please enter alternative diagnosis in comments box)	1
fatty liver disease - non-alcohol related fatty liver disease	1
Other (please enter alternative diagnosis in comments box)	1

Original report and further information (if any): Steatohepatitis. Cannot be sure if alcoholic or non-alcoholic. Bridging fibrosis (cirrhotic on imaging).

Complete answer for 10 marks would include: 'steatohepatitis' specifically and at least bridging fibrosis (100% consensus for stage!)

If 'steatohepatitis' missing from response lose 5

Case Number: L23_A9

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 20. Combined liver and kidney transplant.

Specimen: Liver explant

Macroscopic: Explanted liver weighing 1642 and measuring 270 x 170 x 75mm.

Immunohistochemistry: EPSR

Original Diagnosis: Good example of congenital hepatic fibrosis, whilst this is an explant it can be seen in biopsies and would therefore be of interest to the broader group. the patient had autosomal recessive polycystic kidney disease and received a combined liver and kidney transplant

Tumour:	Popularity:
- No tumour/lesion present	86.2%
Other (please specify in Comments)	5.3%
biliary hamartoma / von Meyenberg complex	3.2%
cyst (non-neoplastic)	3.2%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		78
		5
Other (please specify in Comments)		3
- No tumour/lesion present	- No tumour/lesion present	3
Other (please specify in Comments)	biliary hamartoma / von Meyenberg complex	1
biliary hamartoma / von Meyenberg complex	cyst (non-neoplastic)	1
cyst (non-neoplastic)	Other (please specify in Comments)	1
biliary hamartoma / von Meyenberg complex		1
cyst (non-neoplastic)		1

Pattern:	Popularity:
Other (please specify in Comments)	64.9%
chronic biliary disease	19.1%
cholestasis, bilirubinostasis	5.3%
not applicable	3.2%
chronic hepatitis	2.1%
abnormal, no pattern discernible	2.1%

Pattern 1:	Pattern 2:	Count:
Other (please specify in Comments)		59
chronic biliary disease		15
		6
cholestasis, bilirubinostasis		3
not applicable		3
abnormal, no pattern discernible		2
chronic hepatitis		1
chronic biliary disease	cholestasis, bilirubinostasis	1
chronic biliary disease	chronic biliary disease	1
chronic biliary disease	chronic hepatitis	1
cholestasis, bilirubinostasis	Other (please specify in Comments)	1
Other (please specify in Comments)	Other (please specify in Comments)	1

Stages:	Popularity:
advanced fibrosis with bridging and nodularity/cirrhosis	76.6%
Other (please specify in Comments)	17.0%
fibrosis with bridging between vascular structures	3.2%
not applicable / no special stains to assess architecture	1.1%

Diagnostic categories:	Popularity:
ductal plate malformation/polycystic liver disease/congenital hepatic fibrosis	83.0%
Other (please enter alternative diagnosis in comments box)	6.4%
chronic cholangiopathy NOS	2.1%
- histologically indeterminate for cause	2.1%
primary biliary cholangitis	1.1%
large bile duct obstruction	1.1%
manifestation of systemic or extrahepatic disease (please specify in comments box)	1.1%
- not applicable (insufficient non-lesional tissue)	1.1%

Diagnosis Combination:	Count:
ductal plate malformation/polycystic liver disease/congenital hepatic fibrosis	78
Other (please enter alternative diagnosis in comments box)	6
[No selections made]	3
- histologically indeterminate for cause	1
- histologically indeterminate for cause, chronic cholangiopathy NOS	1
- not applicable (insufficient non-lesional tissue)	1
chronic cholangiopathy NOS	1
large bile duct obstruction	1
manifestation of systemic or extrahepatic disease (please specify in comments box)	1
primary biliary cholangitis	1

Original report and further information (if any): Good example of congenital hepatic fibrosis, whilst this is an explant it can be seen in biopsies and would therefore be of interest to the broader group. the patient had autosomal recessive polycystic kidney disease and received a combined liver and kidney transplant

Complete answer for 10 marks would include: 'ductal plate malformation/polycystic liver disease/congenital hepatic fibrosis 'consensus for this selection, allow reference to ductal plate malformation/synonyms 'polycystic' anywhere in the response. Not to score re fibrotic stage as it is not a typical fibrosis progression as observed in other diseases.

If no recognition of DPM/CHF anywhere in the response lose 10

Case Number: L23_A10

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 50. In patient, jaundice, ascites. Signs of PHT on imaging.

Specimen: Needle biopsy

Macroscopic: Multiple cores and fragments, longest 12mm, shortest 1mm

Immunohistochemistry: van Gieson

Original Diagnosis: Steatohepatitis, cirrhosis. Suggestive of alcoholic aetiology. Alcohol history confirmed after biopsy.

Tumour:	Popularity:
- No tumour/lesion present	96.8%
combined hepatocellular and cholangiocarcinoma	0.0%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		88
- No tumour/lesion present	- No tumour/lesion present	3
		3

Pattern:	Popularity:
steatohepatitis	90.4%
steatosis	11.7%
chronic hepatitis	3.2%
not applicable	2.1%
chronic biliary disease	2.1%
cholestasis, bilirubinostasis	2.1%
vascular disease	1.1%
Other (please specify in Comments)	1.1%
lobular hepatitis	1.1%

Pattern 1:	Pattern 2:	Count:
steatohepatitis		72
steatohepatitis	steatosis	4
steatosis		3
steatohepatitis	cholestasis, bilirubinostasis	2
steatohepatitis	not applicable	2
		2
chronic biliary disease	steatosis	2
vascular disease	steatosis	1
steatohepatitis	Other (please specify in Comments)	1
chronic hepatitis	steatohepatitis	1
steatosis	steatohepatitis	1
chronic hepatitis	chronic hepatitis	1
steatohepatitis	chronic hepatitis	1
steatohepatitis	lobular hepatitis	1

Stages:	Popularity:
advanced fibrosis with bridging and nodularity/cirrhosis	100.0%

Diagnostic categories:	Popularity:
fatty liver disease - either alcohol or non-alcohol	77.7%
fatty liver disease - alcohol related liver disease	17.0%
Other (please enter alternative diagnosis in comments box)	4.3%

chronic cholangiopathy NOS	1.1%
fatty liver disease - non-alcohol related fatty liver disease	1.1%
autoimmune hepatitis	1.1%
primary sclerosing cholangitis	1.1%
large bile duct obstruction	1.1%
manifestation of systemic or extrahepatic disease (please specify in comments box)	1.1%

Diagnosis Combination:	Count:
fatty liver disease - either alcohol or non-alcohol	68
fatty liver disease - alcohol related liver disease	16
fatty liver disease - either alcohol or non-alcohol, Other (please enter alternative diagnosis in comments box)	3
[No selections made]	1
autoimmune hepatitis, fatty liver disease - either alcohol or non-alcohol	1
chronic cholangiopathy NOS, primary sclerosing cholangitis	1
fatty liver disease - either alcohol or non-alcohol, large bile duct obstruction	1
fatty liver disease - non-alcohol related fatty liver disease	1
manifestation of systemic or extrahepatic disease (please specify in comments box)	1
Other (please enter alternative diagnosis in comments box)	1

Original report and further information (if any): Steatohepatitis, cirrhosis. Suggestive of alcoholic aetiology. Alcohol history confirmed after biopsy.

Complete answer for 10 marks would include: 'steatohepatitis' specifically, advanced fibrosis /cirrhosis (all!) and sole diagnosis of fatty liver disease either alcohol or non alcohol related.

If 'steatohepatitis' missing from response lose 5

If making a diagnosis of something else in addition even if fatty liver disease also mentioned lose 5, strong consensus for fatty liver disease alone.

Many favour ArLD

Case Number: L23_A11

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Male 71. Presented with acute severe hepatitis. Viral screen negative. Normal Igs, unremarkable autoimmune serology. Being treated for prostate cancer with bicalutamide.

Specimen: Needle biopsy

Macroscopic: 3 cores of tan tissue measuring between 4mm and 7mm in length

Immunohistochemistry: HVG

Original Diagnosis: Acute hepatitis with bridging and acinar necrosis. No significant underlying fibrosis. Clinically fits with DILI from bicalutamide.

Tumour:	Popularity:
- No tumour/lesion present	95.7%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		86
- No tumour/lesion present	- No tumour/lesion present	4
		4

Pattern:	Popularity:
lobular hepatitis	83.0%
cholestasis, bilirubinostasis	13.8%
Other (please specify in Comments)	11.7%
abnormal, no pattern discernible	3.2%
chronic hepatitis	2.1%
steatohepatitis	1.1%
chronic biliary disease	1.1%
not applicable	1.1%

Pattern 1:	Pattern 2:	Count:
lobular hepatitis		59
lobular hepatitis	cholestasis, bilirubinostasis	9
Other (please specify in Comments)		7
		3
abnormal, no pattern discernible		3
cholestasis, bilirubinostasis	lobular hepatitis	3
lobular hepatitis	Other (please specify in Comments)	2
Other (please specify in Comments)	Other (please specify in Comments)	1
lobular hepatitis	chronic biliary disease	1
lobular hepatitis	chronic hepatitis	1
lobular hepatitis	lobular hepatitis	1
steatohepatitis	lobular hepatitis	1
lobular hepatitis	not applicable	1
cholestasis, bilirubinostasis	Other (please specify in Comments)	1
chronic hepatitis		1

Stages:	Popularity:
hepatocyte loss or bridging - favour collapse not fibrosis	54.3%
no fibrosis/equivocal fibrosis	18.1%
fibrosis with bridging between vascular structures	9.6%
mild/early fibrosis without bridging	7.4%
advanced fibrosis with bridging and nodularity/cirrhosis	6.4%
Other (please specify in Comments)	3.2%
not applicable / no special stains to assess architecture	1.1%

Diagnostic categories:	Popularity:
drug induced liver injury (please specify in comments box)	66.0%
acute / subacute hepatitis - autoimmune / drug / viral	37.2%

Other (please enter alternative diagnosis in comments box)	2.1%
autoimmune hepatitis	1.1%
- histologically indeterminate for cause	1.1%

Diagnosis Combination:	Count:
drug induced liver injury (please specify in comments box)	57
acute / subacute hepatitis - autoimmune / drug / viral	29
acute / subacute hepatitis - autoimmune / drug / viral, drug induced liver injury (please specify in comments box)	5
- histologically indeterminate for cause	1
acute / subacute hepatitis - autoimmune / drug / viral, Other (please enter alternative diagnosis in comments box)	1
autoimmune hepatitis, Other (please enter alternative diagnosis in comments box)	1

Original report and further information (if any): Acute hepatitis with bridging and acinar necrosis. No significant underlying fibrosis. Clinically fits with DILI from bicalutamide.

Complete answer for 10 marks would include: acute/subacute injury including DILI as DD or DILI alone.

Diagnosis of AIH unqualified with no description of an acute pattern of injury lose 10. At meeting 4.7.23 noted that this does not apply to any responses, acute injury but no mention of DILI lose 5.

Case Number: L23_A12

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 53. Liver lesions, ?colorectal carcinoma metastases.

Specimen: liver resection

Macroscopic: Non anatomical liver resection segment 5/6. 1.2cm white lesion beneath the capsule well clear of margins. 4 other NARs received.

Immunohistochemistry: glutamine synthetase

Original Diagnosis: focal nodular hyperplasia

Tumour:	Popularity:
focal nodular hyperplasia	96.8%
hepatocellular adenoma NOS	2.1%
hepatocellular adenoma beta catenin activated	1.1%
- No tumour/lesion present	1.1%

Tumour 1:	Tumour 2:	Count:
focal nodular hyperplasia		88

hepatocellular adenoma NOS		2
focal nodular hyperplasia	focal nodular hyperplasia	2
focal nodular hyperplasia	- No tumour/lesion present	1
hepatocellular adenoma beta catenin activated		1

Pattern:	Popularity:
within normal limits	64.9%
Other (please specify in Comments)	12.8%
not applicable	8.5%
cholestasis, bilirubinostasis	1.1%
steatosis	1.1%
vascular disease	1.1%

Pattern 1:	Pattern 2:	Count:
within normal limits		61
Other (please specify in Comments)		11
		10
not applicable		6
not applicable	not applicable	2
Other (please specify in Comments)	Other (please specify in Comments)	1
cholestasis, bilirubinostasis		1
steatosis		1
vascular disease		1

Stages:	Popularity:
not applicable / no special stains to assess architecture	52.1%
no fibrosis/equivocal fibrosis	21.3%
fibrosis with bridging between vascular structures	1.1%
advanced fibrosis with bridging and nodularity/cirrhosis	1.1%
Other (please specify in Comments)	1.1%

Diagnostic categories:	Popularity:
- no evidence of diffuse/background liver disease	26.6%
Other (please enter alternative diagnosis in comments box)	6.4%
- not applicable (insufficient non-lesional tissue)	2.1%
- histologically indeterminate for cause	2.1%

Diagnosis Combination:	Count:
[No selections made]	60
- no evidence of diffuse/background liver disease	24
Other (please enter alternative diagnosis in comments box)	6
- histologically indeterminate for cause	2
- no evidence of diffuse/background liver disease, - not applicable (insufficient non-lesional tissue)	1
- not applicable (insufficient non-lesional tissue)	1

Original report and further information (if any): focal nodular hyperplasia

Complete answer for 10 marks would include: FNH

No consensus for background liver

Adenoma diagnosis lose 5 if further work specified that would lead to FNH diagnosis (already have GS) if not lose 10

Case Number: L23_A13

Number of responses: 94. Date of analysis: 31 May 2023

Clinical: Female 61. Advanced liver disease of uncertain aetiology. Presented with portal hypertension with variceal bleed and encephalopathy. Turner's syndrome.

Specimen: Liver explant

Macroscopic: Explant weighing 632g and measuring 186 x 110 x 70mm. Micronodular appearances with nodules measuring 1-2mm.

Immunohistochemistry: EPSR and reticulin both blocks

Original Diagnosis: Diffuse and variable architectural and vascular abnormalities, NRH like changes, obliterative portal venopathy and areas of incomplete septal cirrhosis; in addition paraseptal areas with a cirrhosis-type appearance. The observed constellation of findings have been reported in patients with Turners syndrome most likely secondary to vascular abnormalities associated with the condition. I thought that the case would be of interest to the group.

Tumour:	Popularity:
- No tumour/lesion present	58.5%
focal nodular hyperplasia	4.3%
Other (please specify in Comments)	2.1%

Tumour 1:	Tumour 2:	Count:
- No tumour/lesion present		53
		33
focal nodular hyperplasia		4
Other (please specify in Comments)		2
- No tumour/lesion present	- No tumour/lesion present	2

Pattern:	Popularity:
vascular disease	34.0%
Other (please specify in Comments)	14.9%
abnormal, no pattern discernible	4.3%
chronic biliary disease	3.2%
chronic hepatitis	3.2%
not applicable	2.1%

cholestasis, bilirubinostasis	2.1%
steatosis	2.1%
steatohepatitis	1.1%

Pattern 1:	Pattern 2:	Count:
		35
vascular disease		29
Other (please specify in Comments)		9
abnormal, no pattern discernible		4
chronic biliary disease		3
chronic hepatitis		3
vascular disease	Other (please specify in Comments)	3
not applicable		2
cholestasis, bilirubinostasis		1
cholestasis, bilirubinostasis	cholestasis, bilirubinostasis	1
Other (please specify in Comments)	Other (please specify in Comments)	1
steatosis	Other (please specify in Comments)	1
steatohepatitis		1
steatosis		1

Stages:	Popularity:
advanced fibrosis with bridging and nodularity/cirrhosis	37.2%
fibrosis with bridging between vascular structures	13.8%
Other (please specify in Comments)	10.6%
mild/early fibrosis without bridging	3.2%
subtle architectural abnormalities, vascular disease	2.1%

Diagnostic categories:	Popularity:
Other (please enter alternative diagnosis in comments box)	36.2%
manifestation of systemic or extrahepatic disease (please specify in comments box)	10.6%
ductal plate malformation/polycystic liver disease/congenital hepatic fibrosis	4.3%
- histologically indeterminate for cause	4.3%
fatty liver disease - non-alcohol related fatty liver disease	2.1%
chronic viral hepatitis (hepatotropic viruses - please specify in comments box)	1.1%
autoimmune hepatitis	1.1%
drug induced liver injury (please specify in comments box)	1.1%
- not applicable (insufficient non-lesional tissue)	1.1%
chronic cholangiopathy NOS	1.1%

Diagnosis Combination:	Count:
[No selections made]	36
Other (please enter alternative diagnosis in comments box)	33
manifestation of systemic or extrahepatic disease (please specify in comments box)	9
- histologically indeterminate for cause	4
ductal plate malformation/polycystic liver disease/congenital hepatic fibrosis	4
fatty liver disease - non-alcohol related fatty liver disease	2

- not applicable (insufficient non-lesional tissue)	1
autoimmune hepatitis	1
chronic cholangiopathy NOS	1
chronic viral hepatitis (hepatotropic viruses - please specify in comments box)	1
drug induced liver injury (please specify in comments box)	1
manifestation of systemic or extrahepatic disease (please specify in comments box), Other (please enter alternative diagnosis in comments box)	1

Original report and further information (if any): Diffuse and variable architectural and vascular abnormalities, NRH like changes, obliterative portal venopathy and areas of incomplete septal cirrhosis; in addition paraseptal areas with a cirrhosis-type appearance. The observed constellation of findings have been reported in patients with Turners syndrome most likely secondary to vascular abnormalities associated with the condition. I thought that the case would be of interest to the group.

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