



Adult Haematuria

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Urological Surgeon

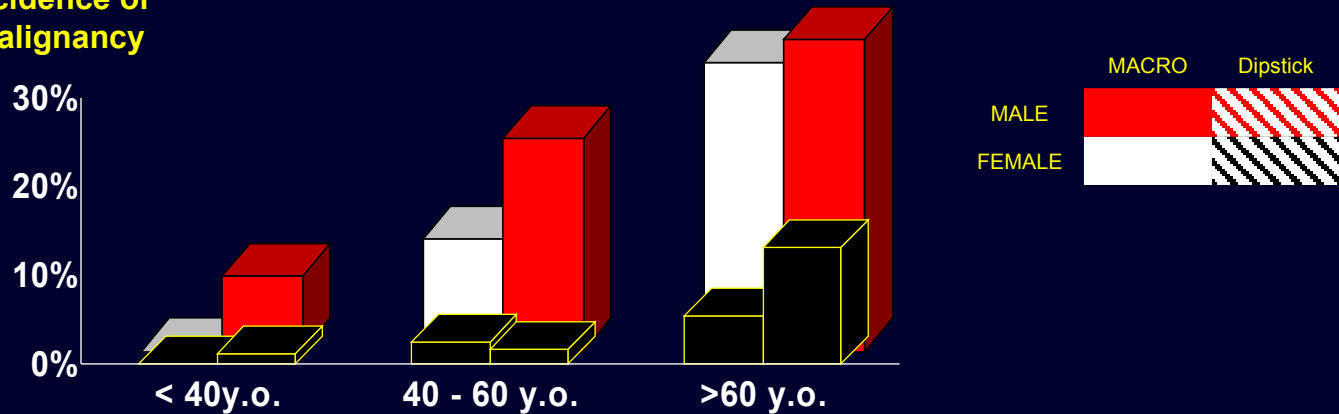
Content

- **Who should be investigated ?**
 - **Common questions**
 - **Investigations pathway**
 - **Referral guidance**
-

Haematuria: Why should investigate patients ?

	ALL	Micro	MACRO
Bladder Ca	12%	5%	13%
Renal Ca	0.7%	0.4%	1.0%
Prostate Ca	0.4%	0.2%	0.6%
Non malignant	27%	26%	29%
No Diagnosis	61%	68%	53%

Incidence of malignancy



Haematuria: Who should be investigated ?

- **Macroscopic haematuria**
- **Microscopic haematuria**

Definition of Significant Haematuria

A single episode of **MACROSCOPIC** haematuria
in the absence of urinary infection

BMJ 19th May 2007

Alarm symptoms in early diagnosis of cancer in primary care: cohort study

Roger Jones et al

- 762,325 patients (124 GP practices 1994-2000)
- 11,108 new occurrences of MACROSCOPIC haematuria
- 472 new urinary tract cancers in men & 162 in women
- 3 year PPV 7.4% (men)
 3.4% (women)

Haemoptysis	7.5% & 4.3%
Dysphagia	5.7% & 2.4%
Rectal bleeding	2.4% & 2.0%

Definition of Significant Haematuria

American Urological Association Best Practice Policy

Microscopic haematuria on 2 out of 3 occasions
'fresh, correctly collected specimen'

OR

On 1 occasion if high risk

Smoking

Severe irritative urinary symptoms

Exposure to chemicals & dyes

High risk occupation

History of pelvic irradiation



Prevalence of Asymptomatic Microscopic Haematuria (AMH)

Population studies

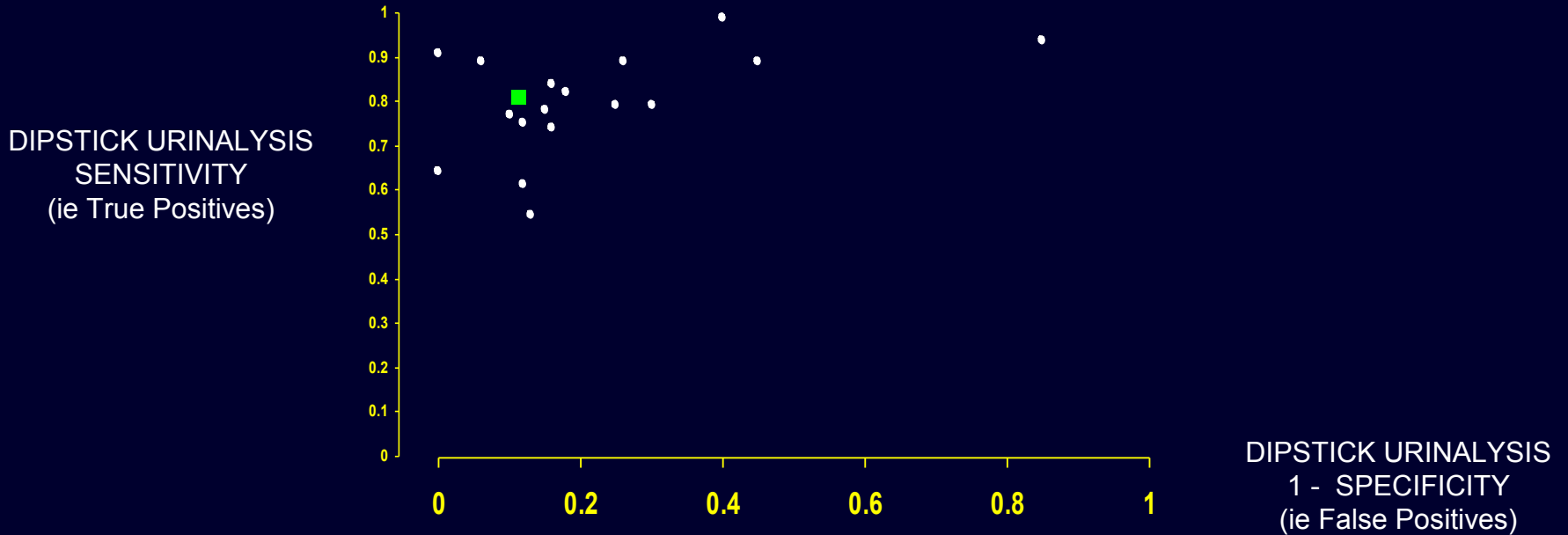
Range ~ 0.19 – 21% difference in age and sex of study populations

Increases with age > 60 yo ~ 21%

Dipstick Positive or Microscopy confirmed ?

- Studies difficult to interpret
 - Differing dipstick criteria used eg trace, +, ++, +++
 - Differing microscopy criteria used eg >1RBC/HPF, >3, >5, >10
-

Dipstick Positive or Microscopy confirmed ?



Multistix

Sensitivity
Specificity

mean = 79.5 (65.3 – 91.7)

mean = 87.3 (76.2 – 97.8)

Dipstick urinalysis OR microscopy ?

? Go on dipstick urinalysis if persistent

? Confirm with microscopy with cut-off of > 3 RBC / hpf

? Go on dipstick if high grade ie 2+ or 3+

BUT check Trace or 1+ check with microscopy

NHS 18 week website => 1+ dipstick OR >3 RBC / hpf

What about positive urinalysis BUT with negative microscopy ?

St Barts, London
2002

143 patients with dipstick haem &
negative microscopy.

No cancer found

Balance of risks

? Non invasive investigations

Should we investigate AMH at all ?

Time to abandon testing for microscopic haematuria in adults?

BMJ 2003;326:813-815

Per-Uno Malmström

3 studies

Cohort of people with AMH

Compared with a matched group of controls (ie not known to have

AMH)

Mohr DN et al *J Gen Intern Med* 1987

Hiatt RA et al *Cancer Epid Biom Prev* 1994

Choi BC et al *J Soc Occup Med* 1990

These controlled studies did not find more urinary cancers in patients with microhaematuria than in those without it.

What if there is another explanation for the haematuria ?

Urinary infection
'Renal colic' or proven stones

Warfarin
Following exercise

Issues in the management of haematuria

MICROSCOPIC HAEMATURIA

- » Who should be investigated
- » How urgently should they be investigated
- » What imaging and investigations are required

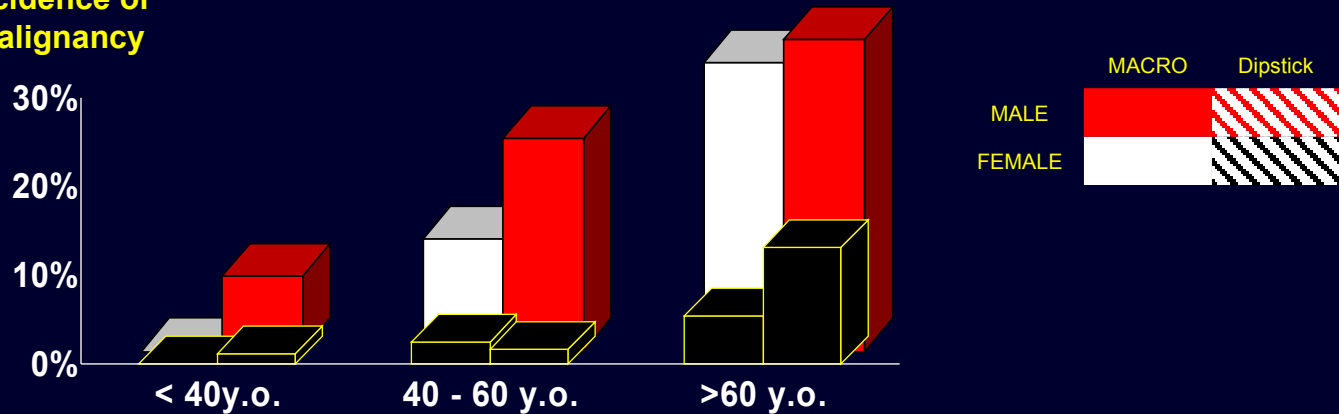
MACROSCOPIC HAEMATURIA

- » What imaging and investigations are required
-

Why do we investigate haematuria urgently ?

	ALL	Dipstick	MACRO
Bladder Ca	12%	5%	13%
Renal Ca	0.7%	0.4%	1.0%
Prostate Ca	0.4%	0.2%	0.6%
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Incidence of malignancy

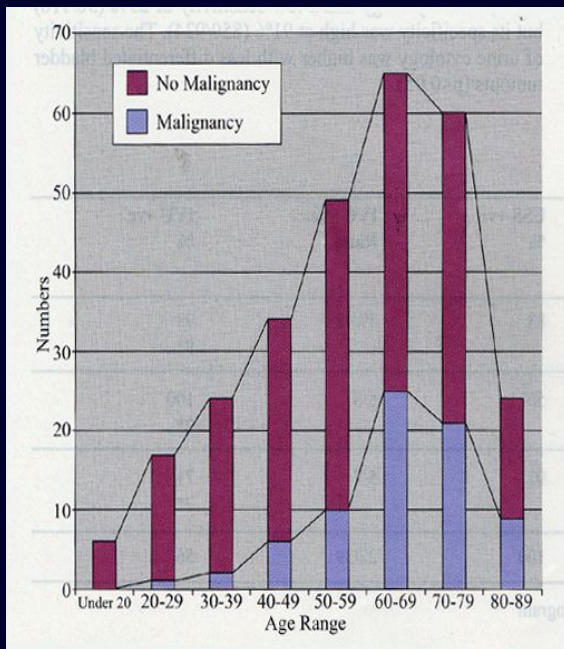


Haematuria investigation based on a standard protocol: emphasis on the diagnosis of urological malignancy

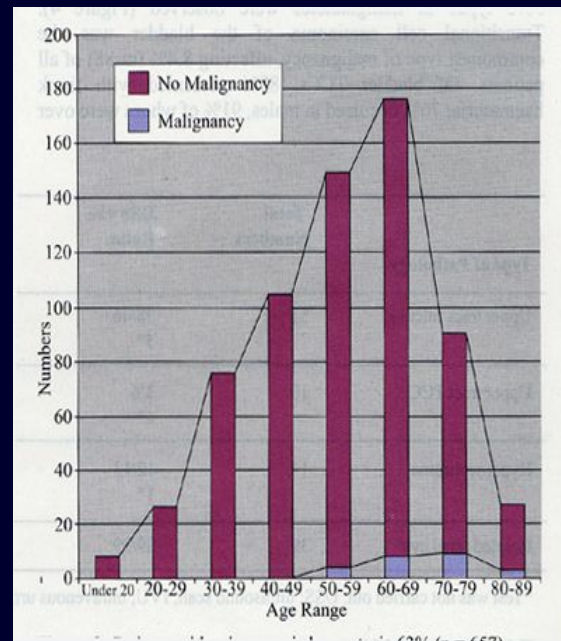
S. ALISHAHI et al JRCS Edin February 2002

N = 1046 over 5 years

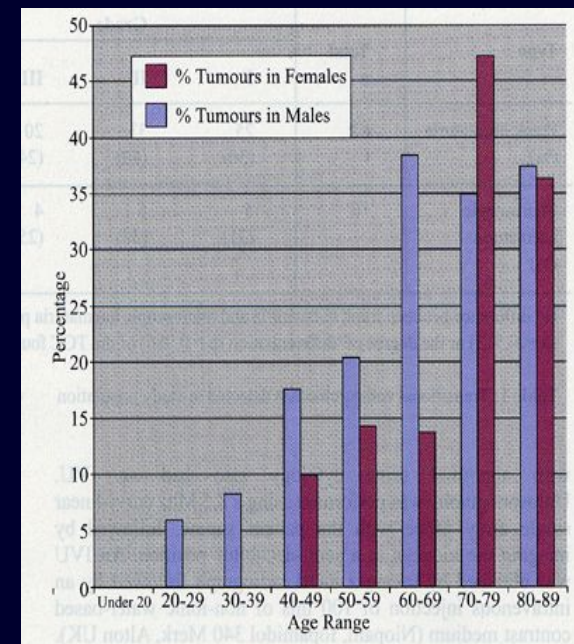
Macrosopic haematuria



Microscopic haematuria



Male v Female



Summary of risk

- **Macroscopic haematuria is associated with a significant risk of underlying significant disease.**
 - **Microscopic haematuria is very rarely associated with a risk of underlying significant disease in patients less than 40 years old**
 - **Microscopic haematuria may be associated with a risk of underlying significant disease in patients greater than 40 years old**
-

Does anyone not require referral ?

- Patients with haematuria related to another condition which settles after that condition is treated
- Patients previously fully investigated with no change in symptoms / signs
- In a patient < 40 y.o. with microscopic haematuria urine cytology can replace cystoscopy

Unless

Smoking
Severe irritative urinary symptoms
Exposure to chemicals & dyes
High risk occupation
History of pelvic irradiation

Does anyone not require referral ?

Will probably be patient determined
with their assessment of risk

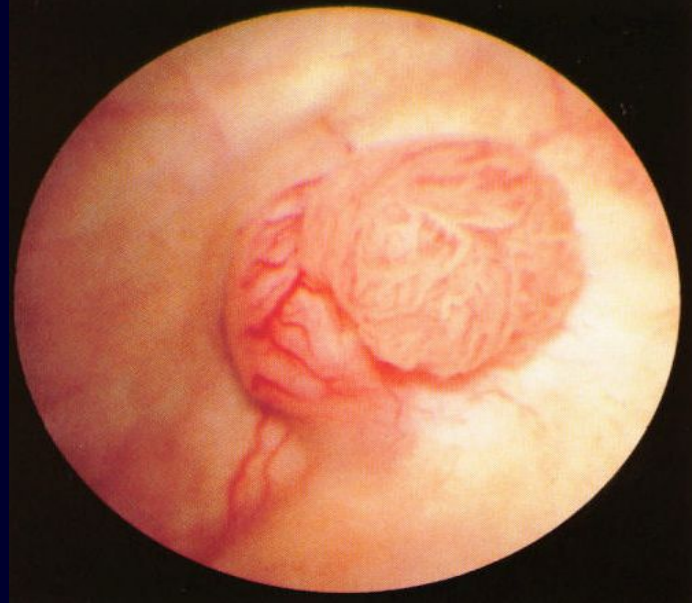
NB Insurance companies and others !

Which investigations ?

- **Bladder** Flexible cystoscopy
 - **Upper Tract Imaging** Ultrasound Scan
Abdominal X-ray
IVU
CTU
 - **A urine test** e.g. urine cytology (?? NMP-22)
-

Haematuria Clinics

Flexible cystoscopy & consultation

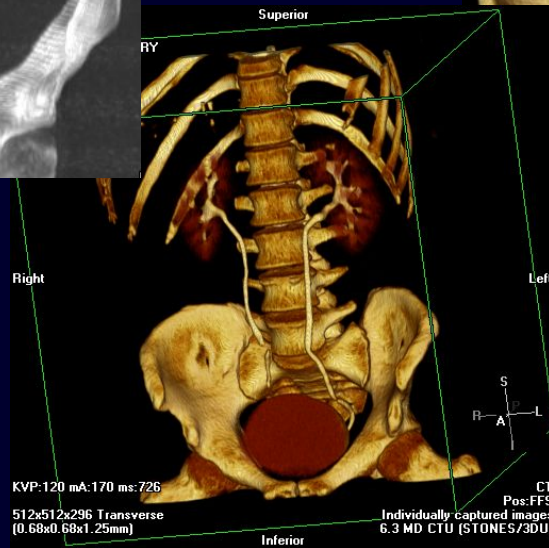
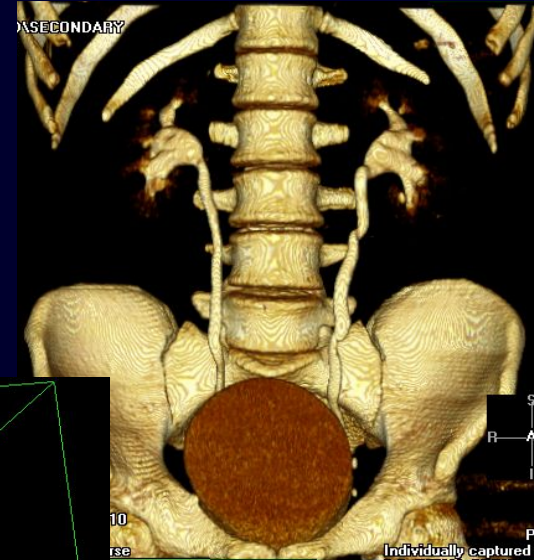


Upper tracts be imaging

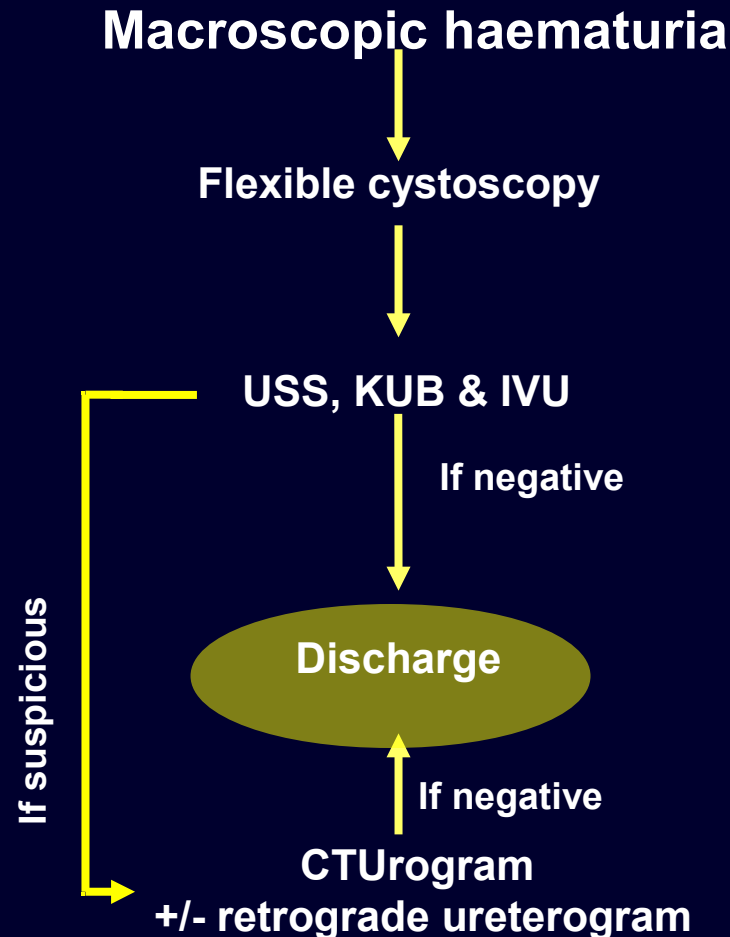
No consensus

No guidelines

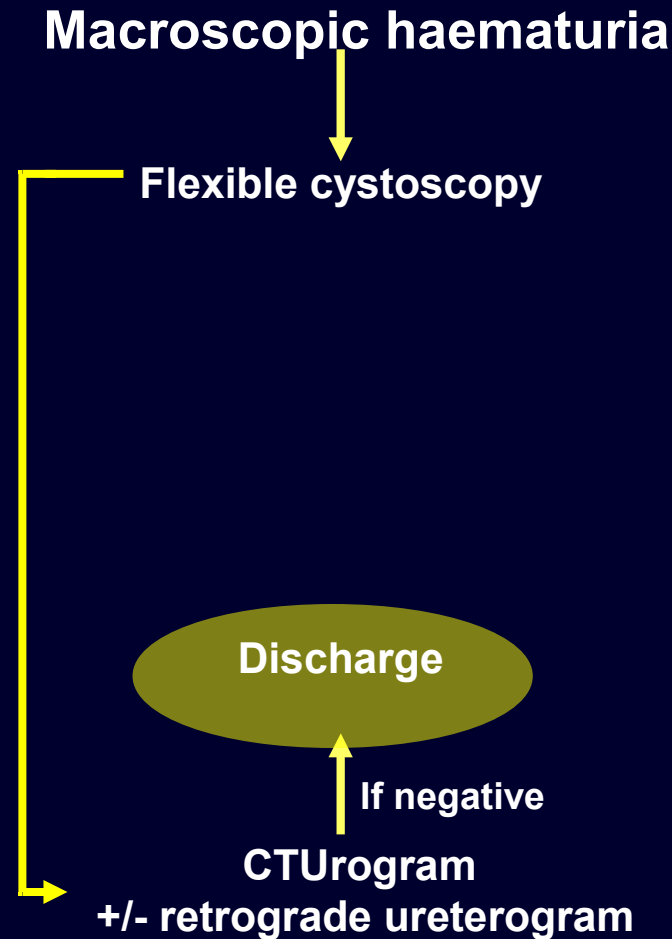
CT Urography



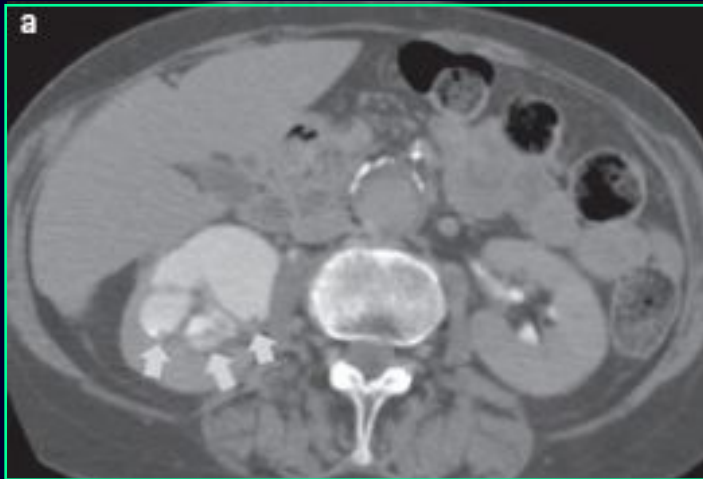
Diagnostic pathway for macroscopic haematuria in Oxford 2001-2004



Diagnostic pathway for macroscopic haematuria in Oxford 2001-2004



CT Urography



J Urol 2004

600 patients with persistent microscopic haematuria
& negative investigations

High resolution helical CT	cause found in	43% (n=256)
	cancer found in	6.5% (n=39)

CT Urography

Shouldn't CT be the first imaging modality in patients with haematuria ?

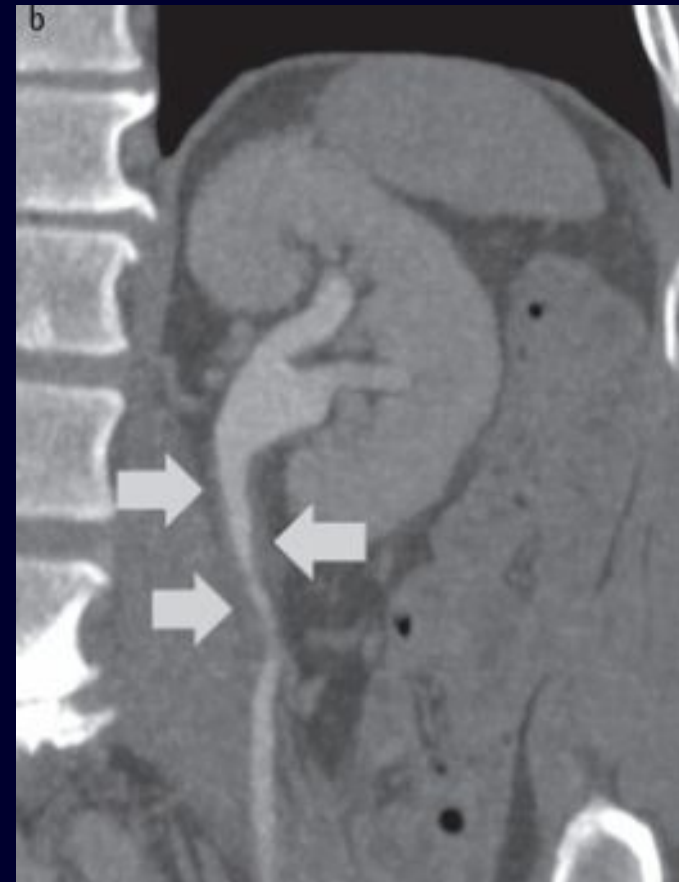
Multidetector computed tomography urography for diagnosing upper urinary tract urothelial tumour

Nigel C. Cowan, Ben W. Turney*, Nia J. Taylor, Catherine L. McCarthy and Jeremy P. Crew*

*Departments of Radiology and *Urology, The Churchill Hospital, Oxford, UK*

Accepted for publication 7 December 2006

CT Urography

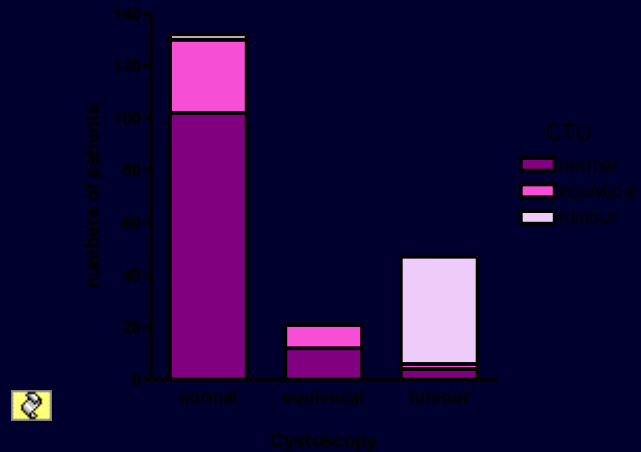


Do patients still need a flexible cystoscopy ?

Computed tomography urography for diagnosing bladder cancer

BJU Int. 2006 Aug;98(2):345-8

Turney BW, Willatt JM, Nixon D, Cowan NC, Crew JP



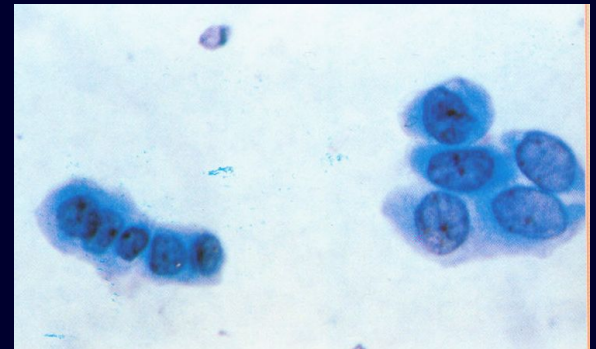
Investigations – Cytology



Urine Cytology

J.Urology 2004 n=1000 pts with haem.

Cytology was the **only** abnormal investigation in 4 patients with urothelial cancer



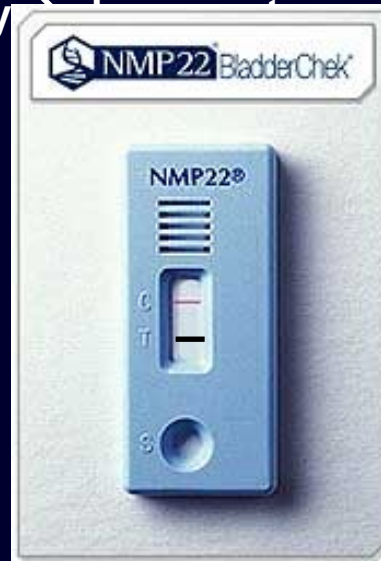
Issues with urine cytology

- **cytology does not replace cystoscopy**
 - **useful for reassurance if not going to refer**
 - **if referral necessary don't do cytology**
(urology will only do if other investigations are negative)
-

Issues with urine cytology

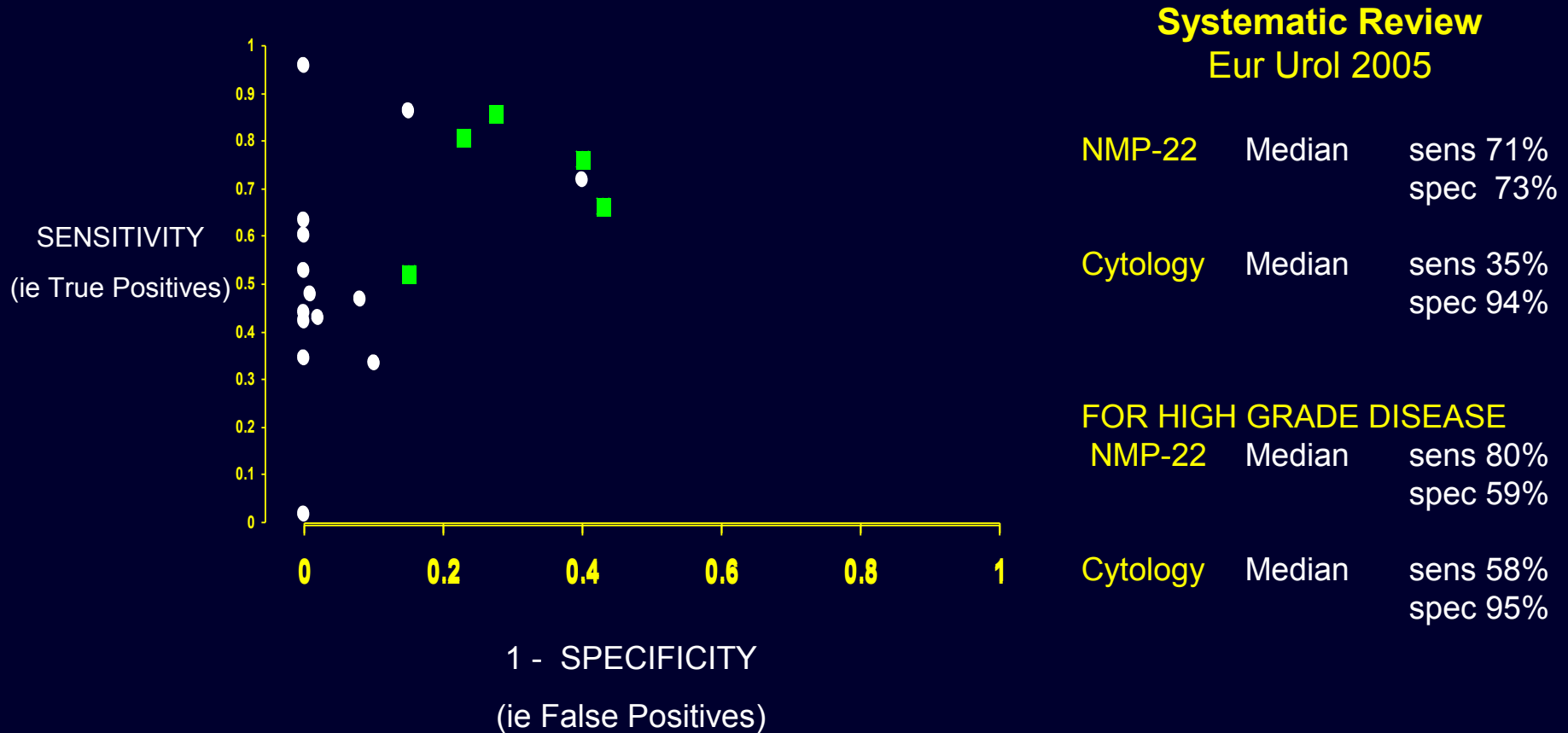
- Expensive (~ £50)
- Spectrum of results
- Delay in results for samples

? An alternative



~ £23 v £50 for cytology

Is there an alternative to cytology ?



Referrals in Oxford : The cancer 2 week wait

Adult macroscopic haematuria

Microscopic haematuria in patients > 50

Referrals in Oxford: Macroscopic Haematuria

Cancer 2 week wait

Fast Track Clinic (NB proforma)

Guidelines #1 : Macroscopic Haematuria

Macroscopic Haematuria



Suitable for Fast Track Clinic



MSU
U&E, Creat, Urinalysis
?PSA



Call Centre 2 W W referral

Fast Track Macroscopic Haematuria Clinic

Patient Arrives Monday a.m



Sees nurse practitioner

Nurse Practitioner



CT scan a.m

Nigel Cowan



Flexible Cystoscopy p.m.

Jeremy Crew

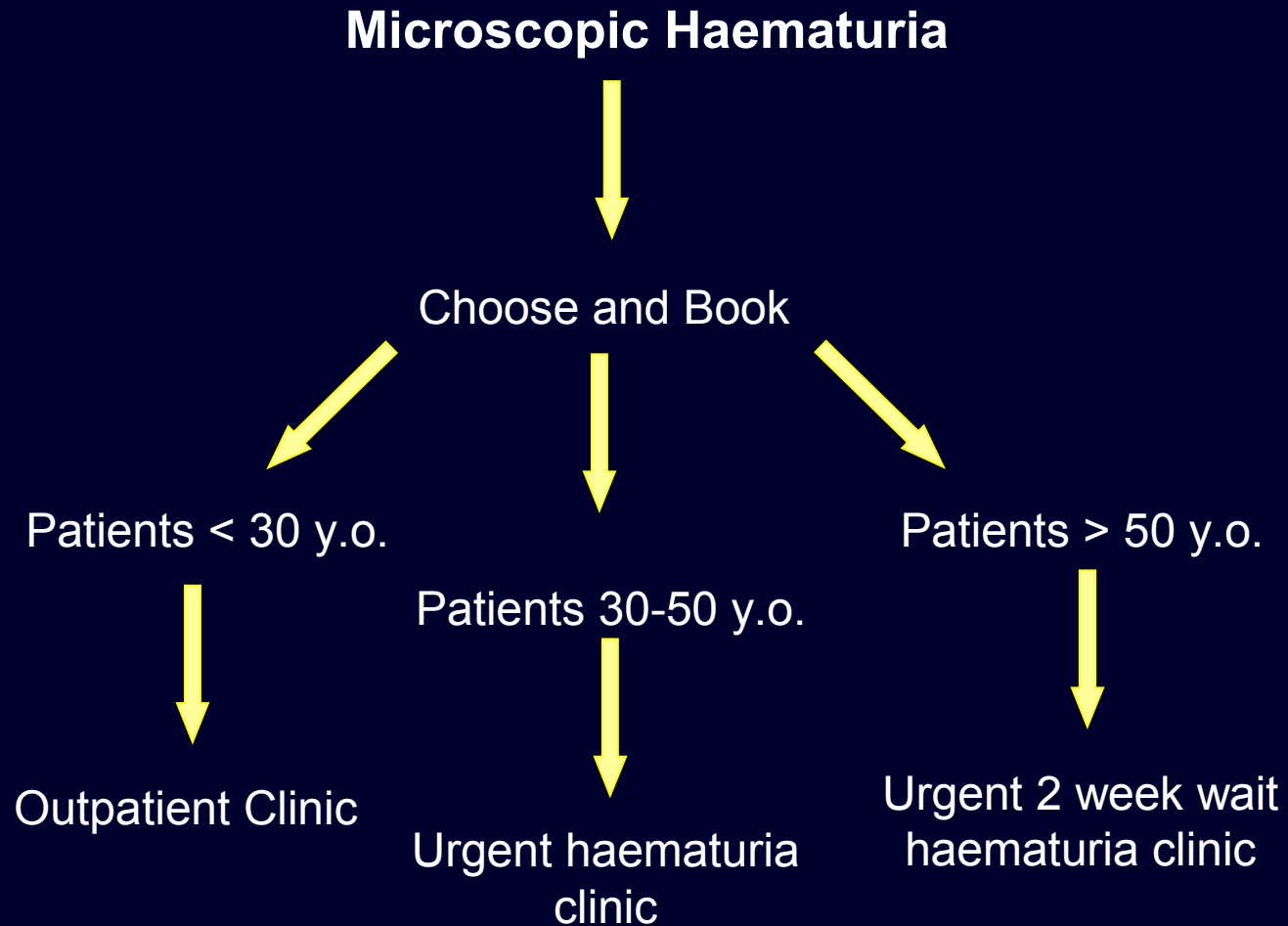


Consultation

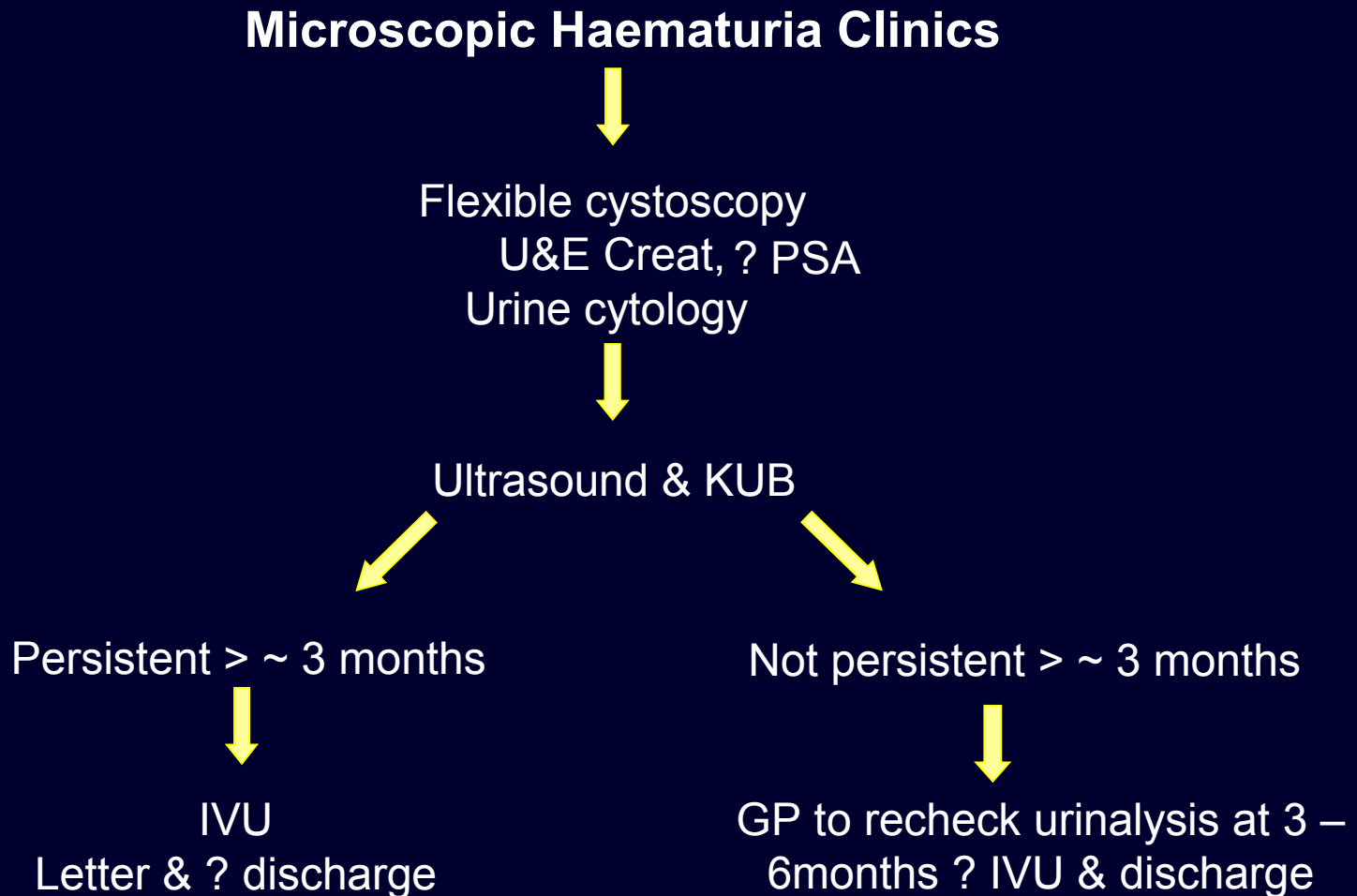


Referral to appropriate source

Guidelines #2 : Microscopic Haematuria



Guidelines #3 : Imaging of patients with microscopic haematuria



Referral of Private Patients

A fast access rapid haematuria clinic (24 hour turn round)

All patients get flexible cystoscopy & CT 3D Urogram

NMP-22 instead of cytology

What should be done about patients with proteinuria ?

**Pt with significant proteinuria (i.e. >2+) should have a
24 hour urinary protein**

&

consider nephrological referral

Specific causes of haematuria

- Haematuria after exercise
 - Prostatic bleeding
 - Haematuria in men who have had TURP's
-

Take home points

- All adults with macroscopic haematuria requires referral via cancer 2 week wait
- Consider confirming trace or 1+ AMH with microscopy prior to referring
- Confirm persistent AMH (ie 2 out of 3 occasions), unless high risk factors
- Discussion with patient required over small risks associated with AMH
- Decision over who to refer with AMH on a patient by patient basis
- Patients less than 40 yo with AMH (and no risk factors) may be managed without cystoscopy or referral
- Pre-investigation of patients with AMH can include bloods and ? ultrasound
- Do not do urine cytology if planning urology referral

There once was a old Brigadier
Whose urine though red caused no fear
He said 'What a hoot
It is just the beetroot'
But died of his 'growth' in a year

