Radiologists are reading more cardiac CT exams, but not cardiac MRI

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The use of both cardiac CT and cardiac MRI increased in the Medicare population over the past seven years, according to research presented November 29 at the RSNA meeting.

And it appears that radiologists are reading more cardiac CT exams, but not cardiac MRI studies, presenter Mustafa Al-Ogaili, MD, of the Mayo Clinic in Phoenix, AZ, told session attendees. Al-Ogaili delivered results from a study that tracked the use of cardiac CT, while Zahra Beizavi, MD, of Columbia University in New York City outlined the use trends for cardiac MRI.

Trends in cardiac CT exam interpretation, 2013 and 2020		
	2013	2020
Overall percentage of cardiac CT exams interpreted		
Radiologists	42.8%	58.4%
Cardiologists	49.2%	37.1%
Hospital setting		
Radiologists	52%	58.3%
Cardiologists	48%	41.7%
Office setting		

What could be causing this trend? Al-Ogaili's listed a number of factors:

- Expanded indications for cardiac CT
- Increased perceived utility and value of cardiac CT
- Increased capacity of radiologists to expand cardiac CT services
- Variations in referral patterns between radiologists and cardiologists.

He concluded his presentation by suggesting that future research explore cardiac CT trends in other patient populations (that is, commercially insured patients and inpatients) and whether it is being used appropriately.

ORIGINAL ARTICLE

A Placebo-Controlled Trial of Percutaneous Coronary Intervention for Stable Angina

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unblinding owing to unacceptable angina or acute coronary syndrome or death. Scores range from 0 to 79, with higher scores indicating worse health status with respect to angina.

RESULTS A total of 301 patients underwent randomization: 151 to the PCI group and 150 to the placebo group. The mean (±SD) age was 64±9 years, and 79% were men. Ischemia was present in one cardiac territory in 242 patients (80%), in two territories in 52 patients (17%), and in three territories in 7 patients (2%). In the target vessels, the median fractional flow reserve was 0.63 (interquartile range, 0.49 to 0.75), and the median instantaneous wave-free ratio was 0.78 (interquartile range, 0.55 to 0.87). At the 12-week follow-up, the mean angina symptom score was 2.9 in the PCI group and 5.6 in the placebo group (odds ratio, 2.21; 95% confidence interval, 1.41 to 3.47; P<0.001). One patient in the placebo group had unacceptable angina leading to unblinding. Acute coronary syndromes occurred in 4 patients in the PCI group and in 6 patients in the placebo group.

CONCLUSIONS Among patients with stable angina who were receiving little or no antianginal medication and had objective evidence of ischemia, PCI resulted in a lower angina symptom score than a placebo procedure, indicating a better health status with respect to angina. (Funded by the National Institute for Health and Care Research Imperial Biomedical Research Centre and others; ORBITA-2 ClinicalTrials.gov

Contemporary surgical and procedural management of benign prostatic hyperplasia

ABSTRACT

Interventions for benign prostatic hyperplasia have evolved from transurethral resection of the prostate and simple prostatectomy to a myriad of office-based and operating-room procedures. The contemporary approach involves matching the right procedure to the right patient, choosing on the basis of prostate characteristics, patient preference, and urologist expertise. This review details currently available and guideline-backed surgical and procedural treatments.

TABLE 1
Office-based procedures for benign prostatic hyperplasia, compared with transurethral resection

Treatment	Transurethral resection of the prostate	Prostatic urethral lift procedure	Water vapor thermal therapy	Temporarily inserted nitinol device
Surgery type	Cystoscopic electric excision	Cystoscopic placement of sutures to open the urethra	Cystoscopic application of steam to ablate the prostate	Cystoscopic placement of a temporary urethral stent
Operative setting	Operating room	Office	Office	Office
Anesthesia	General or spinal	Local, sometimes with sedation	Local, sometimes with sedation	Local, sometimes with sedation
Ideal prostate size	≤ 80 cc (sometimes a bit larger)	≤ 80 cc with no median lobe enlargement	≤ 80 cc (sometimes a bit larger)	< 75 cc, with no median lobe enlargement
Contraindications	Anticoagulation Elevated bleeding risk Narrow urethra	Large median lobe High bladder neck Allergy to implant	Fibrotic gland (due to prior procedure for prostatic hyperplasia or radiation)	Large median lobe Larger gland Fibrotic gland
Advantages	Historical gold standard Widely accessible	Preserves sexual function	Preserves sexual function	Preserves sexual function
Postoperative catheter time	1–3 days	None (some cases)	3–7 days	None
Durability	Good	Poor	Good	Unknown
Erectile dysfunction	Uncommon	None	None	None
Unique complications	Electrolyte abnormalities (transurethral resection syndrome)	Expected retreatment Bladder stones	Transient retention from prostate edema	Dislodgement or migration

KEY POINTS

Symptoms of benign prostate hyperplasia can be related to prostate size or shape, or both. Certain surgeries and procedures are better suited for certain sizes and shapes of prostates.

For patients who prefer an in-office procedure or wish to avoid sexual function-related side effects such as retrograde ejaculation, the minimally invasive surgical procedures are excellent choices.

For patients with a larger prostate, holmium laser enucleation and simple prostatectomy are the definitive options and can provide durable results.

For those who wish to avoid a postoperative catheter, the prostatic urethral lift procedure or a temporarily implanted nitinol device may be a good option.

Letter: Histological changes among asymptomatic chronic HBV carriers with normal alanine aminotransferase levels

Editors,

In their review and meta-analysis, Li et al[1] concluded that moderate-to-severe activity (necroinflammation) and/or significant fibrosis was detected in about 20%–30% of treatment-naïve patients with chronic hepatitis B (CHB) and normal alanine aminotransferase (ALT) levels (≤40 IU/L).

Asymptomatic chronic carriers of HBV with normal liver function tests are generally considered to have no liver pathology. In our previous pilot prospective study,[2] we investigated the possible degree of histologic pathology in 17 HBsAg-positive and HBeAg-negative chronic asymptomatic HBV carriers with persistently normal liver function tests, including ALT levels ≤40 IU/L, and after exclusion other causes of liver disease.

Moreover, as in our cases, they suggested a cut-off HBV DNA level of 10^4 copies/mL for differentiating inactive carriers from HBeAg-negative patients with CHB.[8] However, others reported a level of 10^5 as appropriate to diagnose inactive carriers but misdiagnosed 20% of HBeAg-negative patients with CHB.[9] Most aforementioned studies did not correlate HBV DNA levels with liver histology in such chronic HBV-infected patients. Thus, liver biopsy is likely to be of help in defining the degree of hepatic injury and thereby differentiating inactive carriers from patients with HBeAg-negative HBV infection.

Liver histology should be considered to assess the status of liver disease in asymptomatic chronic HBsAg carriers with normal liver function tests. The result can be used as a basis for follow-up and management.

AUTHOR CONTRIBUTIONS

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MAFLD fibrosis score: Using routine measures to identify advanced fibrosis in metabolic-associated fatty liver disease

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Summary

Background: Early screening may prevent fibrosis progression in metabolic-associated fatty liver disease (MAFLD).

Aims: We developed and validated MAFLD fibrosis score (MFS) for identifying advanced fibrosis (≥F3) among MAFLD patients.

Methods: This cross-sectional, multicentre study consecutively recruited MAFLD patients receiving tertiary care (Malaysia as training cohort [$n=276$] and Hong Kong and Wenzhou as validation cohort [$n=431$]). Patients completed liver biopsy, vibration-controlled transient elastography (VCTE), and clinical and laboratory assessment within 1 week. We used machine learning to select 'highly important' predictors of advanced fibrosis, followed by backward stepwise regression to construct MFS formula.

Results: MFS was composed of seven variables: age, body mass index, international normalised ratio, aspartate aminotransferase, gamma-glutamyl transpeptidase, platelet count, and history of type 2 diabetes. MFS demonstrated an area under the receiver-operating characteristic curve of 0.848 [95% CI 0.800–898] and 0.823 [0.760–0.886]

	Total cohort ($n=707$)	Training cohort ($n=276$)		Validation cohort ($n=431$)		
		Valid	Missing, *n*	Valid	Missing, *n*	*p*
Age (years)	48.2±12.9	52.4±11.4	0	45.5±13.2	0	<0.001
Ethnicity						
Chinese	510 (72.1)	79 (28.6)	0	431 (100.0)	0	–
Malay	140 (19.8)	140 (50.7)		0 (0.0)	0	
Indian	57 (8.1)	57 (20.7)		0 (0.0)	0	
Female sex, *n* (%)	305 (43.1)	145 (52.5)	0	160 (37.1)	0	<0.001
Body mass index (kg/m²)	28.3±4.5	30.2±4.5	0	27.1±4.0	0	<0.001
Waist circumference (cm)	94.7±11.4	98.5±11.0	0	92.1±11.0	15	<0.001
Albumin (g/L)	44.1±4.4	42.1±3.7	0	45.4±4.3	0	<0.001
Platelet count (×10⁹/L)	256.1±65.9	272.9±68.6	0	245.4±61.8	0	<0.001
ALT (U/L)	70.3±60.5	67.0±43.7	0	72.4±69.2	0	0.250
AST (U/L)	43.7±33.8	44.0±25.0	0	43.5±38.4	0	0.837
ALP (U/L)	84.0±36.5	82.1±31.2	0	85.2±39.6	0	0.281
GGT (U/L)	83.4±100.6	90.5±81.9	0	78.8±110.7	0	0.131
INR	1.0±0.1	1.0±0.1	0	1.0±0.1	0	<0.001
Total cholesterol (mmol/L)	4.9±1.1	4.8±1.1	0	5.1±1.1	2	<0.001
Triglycerides (mmol/L)	2.0±1.3	1.8±0.9	0	2.1±1.4	2	<0.001
HDL cholesterol (mmol/L)	1.2±0.4	1.2±0.3	0	1.2±0.5	2	0.371
LDL cholesterol (mmol/L)	2.9±0.9	2.8±1.0	3	3.0±0.9	2	0.002
HbA_{1c} (%)	6.6±1.9	7.0±2.4	0	6.3±1.4	14	<0.001
Hypertension, *n* (%)	345 (48.8)	171 (62.0)	0	174 (40.4)	0	<0.001
Type 2 diabetes, *n* (%)	335 (47.4)	170 (61.6)	0	165 (38.3)	0	<0.001

THE END