World Journal of Radiology

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World J Radiol 2023 July 28; 15(7): 226-233

.226

ISSN 1949-8470 (online)

ORIGINAL ARTICLE

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DOI: 10.4329/wjr.v15.i7.226

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ORIGINAL ARTIC

Basic Study

Can the change of vasomotor activity in irritable bowel syndrome patients be detected *via* color Doppler ultrasound?

Omer Kazci, Fahrettin Ege, Huseyin Aydemir, Saliha Kazci, Sonay Aydin

flow rates were measured again immediately following the fifth stimulus.

RESULTS

In healthy persons with no history of chronic illness, there was a statistically significant decrease in flow rate after stimulation ($P < 0.001$). In addition, stimulation resulted in a statistically significant reduction in the diameter of the brachial artery ($P < 0.001$). Patients diagnosed with IBS had statistically significant vasodilation and an increase in flow rate.

CONCLUSION

Sympathetic stimulation causes a reduction in vascular diameter and blood flow, whereas it has the reverse effect on IBS patients. In investigating the involvement of autonomic neuropathy in the development of IBS, significant changes in brachial artery Doppler parameters were observed before and after stimulation of the median nerve with low-current sensory stimulation. This method is thought to be more user-friendly and comfortable than other methods described in the literature.

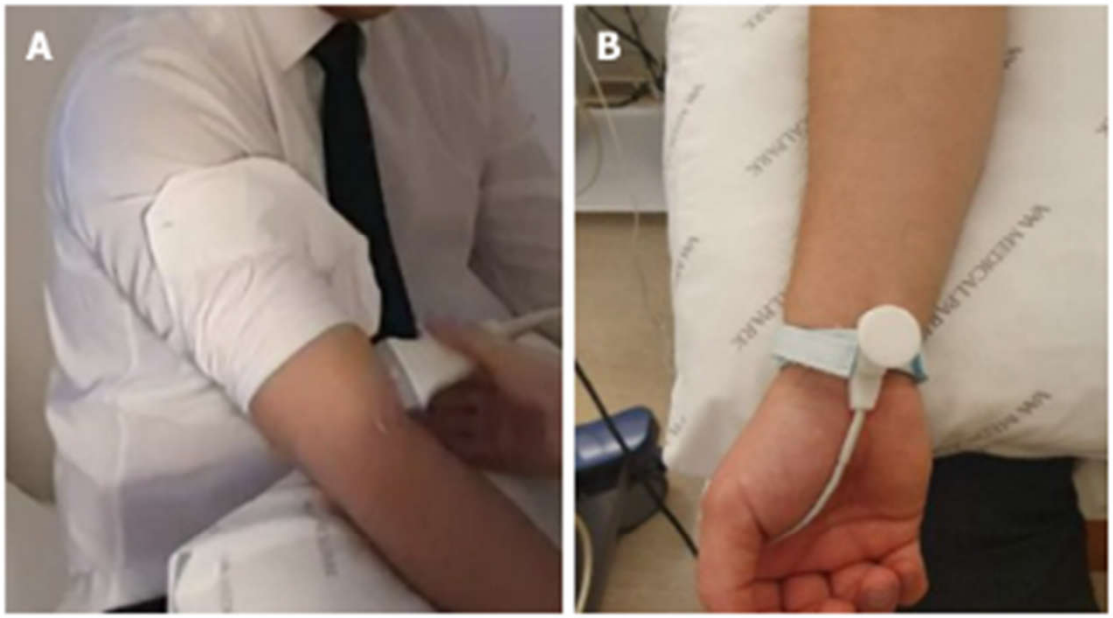

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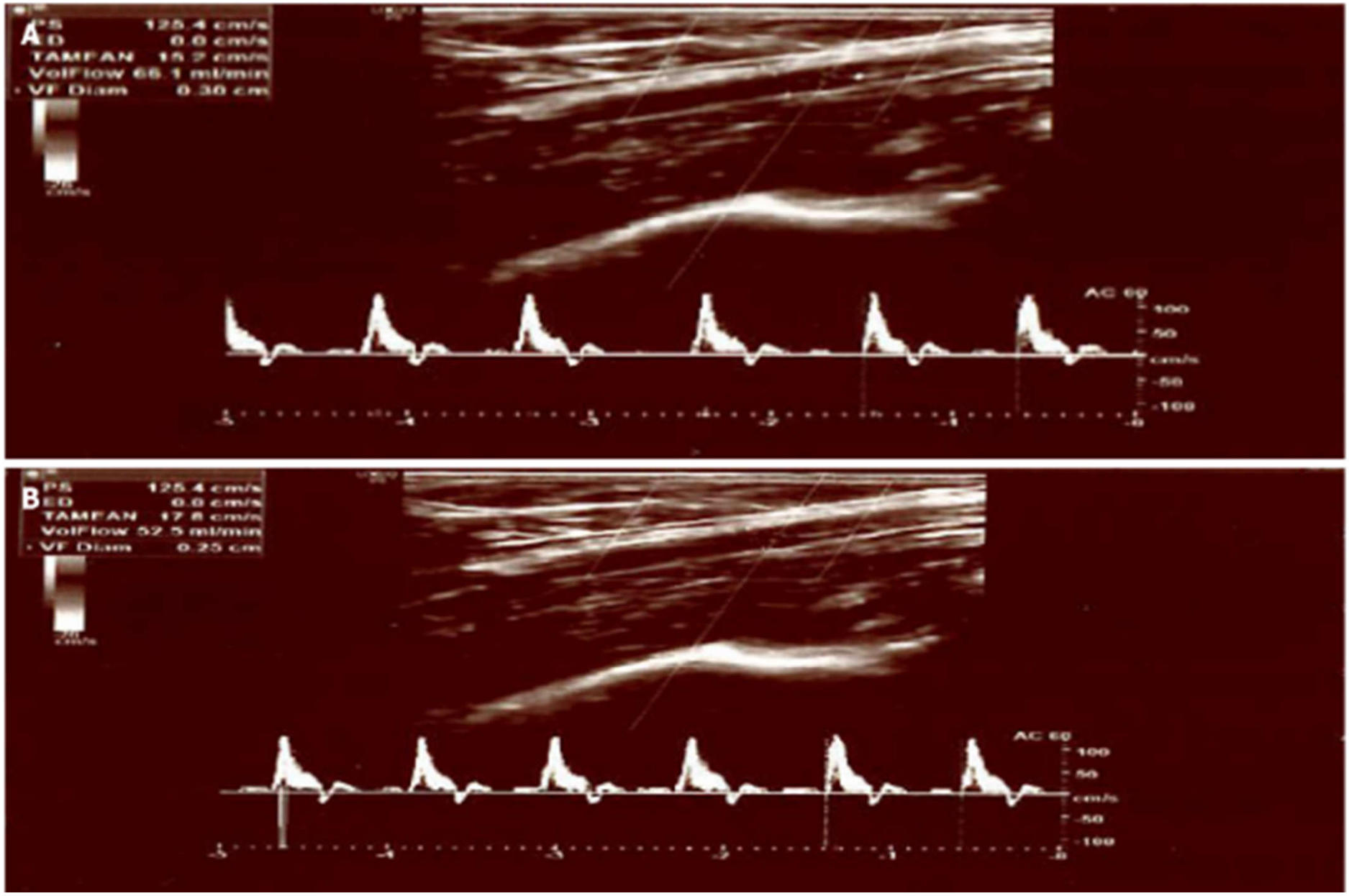
Figure 1 Positioning of the Doppler ultrasound probe and bipolar stimulus electrode. A: Positioning of the Doppler ultrasound probe, 2 cm above the antecubital fossa using a 9 Hz linear probe; B: Positioning of the bipolar stimulus electrode.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ED 6.6 cm/s
TAMFAN 15.2 cm/s
VolFlow 65.1 ml/min
VF Diam 0.36 cm
AC 69
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cm/s
-50
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B
PS 125.4 cm/s
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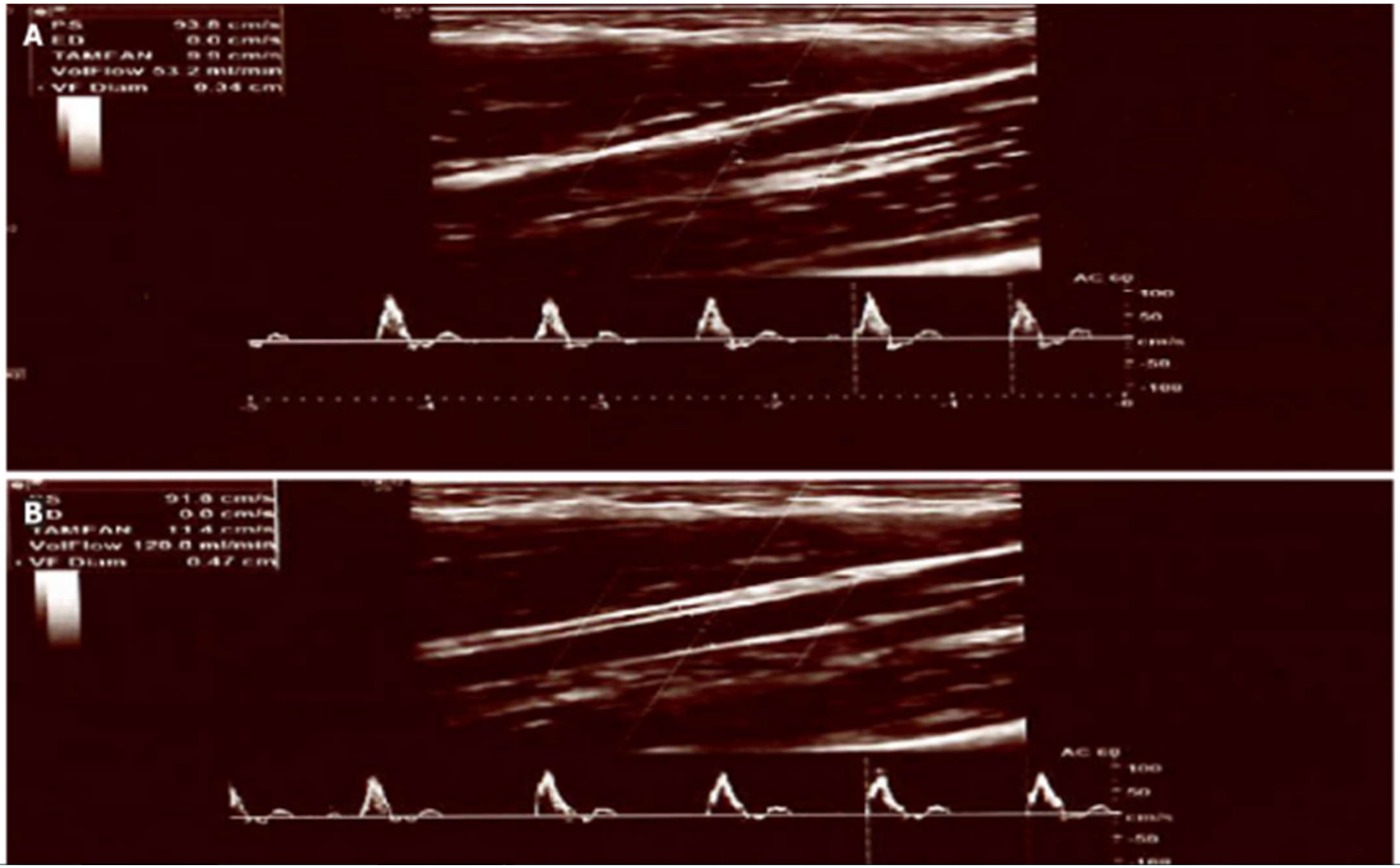
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-50
-100
B
PS 91.6 cm/s
ED 0.6 cm/s
TAMEAN 11.4 cm/s
VolFlow 126.8 ml/min
VF Diam 6.47 cm
AC 69
100
50
cm/s
-50

Core Tip: It has been noted that the autonomic activity of individuals who suffer from irritable bowel syndrome (IBS) differs from that of healthy people. Colored Doppler ultrasonography can be utilized as a noninvasive diagnostic tool that can be performed at any age and at any age, is comfortable for the patient, and does not require further patient compliance to show autonomic dysfunction in patients with IBS.

Gut and Liver

2022 Impact Factor 3.4

Indexed In : Science Citation Index Expanded(SCIE), MEDLINE, Pubmed/Pubmed Central, Elsevier Bibliographic Databases(Scopus & Embase), KCI, Google Scholar, KoreaMed

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Proposal of a Novel Serological Algorithm Combining FIB-4 and Serum M2BPGi for Advanced Fibrosis in Nonalcoholic Fatty Liver Disease

Sang Yi Moon[1], Yang Hyun Baek[1], Se Young Jang[2], Dae Won Jun[3,4], Ki Tae Yoon[5,6], Young Youn Cho[7], Hoon Gil Jo[8], Ae Jeong Jo[9]

Author Info +

Background/Aims: Noninvasive methods have become increasingly critical in the diagnosis of fibrosis in chronic liver diseases. Herein, we compared the diagnostic performance of serum Mac2 binding protein glycosylation isomer (M2BPGi) and other serological panels for fibrosis in patients with nonalcoholic fatty liver disease (NAFLD) and proposed an improved two-step diagnostic algorithm for advanced fibrosis.

Methods: We enrolled 231 patients diagnosed with NAFLD who underwent a liver biopsy. We subsequently evaluated the diagnostic performance of serological panels, including serum M2BPGi, a fibrosis index based on four factors (FIB-4), aspartate aminotransferase-to-platelet ratio index (APRI), and NAFLD fibrosis score (NFS), in predicting the stage of liver fibrosis. We then constructed a two-step algorithm to better differentiate advanced fibrosis.

Results: The areas under the receiver operating characteristic curves of serum M2BPGi, FIB-4, APRI, and NFS for advanced fibrosis (≥F3) were 0.823, 0.858, 0.779, and 0.827, respectively. To reduce the performance of unnecessary liver biopsy, we propose a two-step algorithm using FIB-4 as an initial diagnostic tool and serum M2BPGi (≥0.6) as an additional diagnostic method for patients classified as intermediate (23%). Using the proposed algorithm, the sensitivity, specificity, accuracy, positive predictive value, and negative predictive value were 0.812, 0.814, 0.814, 0.600, and 0.927, respectively.

Conclusions: Serum M2BPGi is a simple and effective test for advanced fibrosis in patients with NAFLD. Application of the two-step algorithm based on FIB-4 and M2BPGi proposed here can improve diagnostic performance and reduce unnecessary tests, making diagnosis easily accessible, especially in primary medical centers.

to serum M2BPGi. These parameters were calculated using the following formulas:

FIB-4 = [age (yr)×AST (U/L)]/[platelet count (×10^9/L)×];

APRI = [(AST (U/L)/upper normal limit×100)]/platelet count (×10^9/L);

NFS = –1.675+0.037×age (yr) + 0.094×BMI (kg/m^2) + 1.13×[IGT or DM (yes=1; no=0)] + 0.99×AST/ALT ratio – 0.013×platelet count (×10^9/L) – 0.66×albumin (g/dL).[16-18]

These serological panels were primarily developed and validated in patients aged 35 to 65 years, and subgroup analyses of diagnostic performance in patients aged <35 years were also performed in this study.

None	67 (29.00)	66 (38.37)	1 (1.69)	
Few	86 (37.23)	68 (39.53)	18 (30.51)	
Many	78 (33.77)	38 (22.09)	40 (67.80)	
Fibrosis				<0.001
F0	61 (26.41)	61 (35.47)	0	
F1	70 (30.30)	70 (40.70)	0	
F2	41 (17.75)	41 (23.84)	0	
F3	41 (17.75)	0	41 (69.49)	
F4	18 (7.79)	0	18 (30.51)	
NAS				<0.001
Not NASH (NAS ≤2)	33 (14.29)	32 (18.60)	1 (1.69)	
Borderline NASH	75 (32.47)	59 (34.30)	16 (27.12)	
Definite NASH (NAS ≥5)	123 (53.25)	81 (47.09)	42 (71.19)	

Research Letter

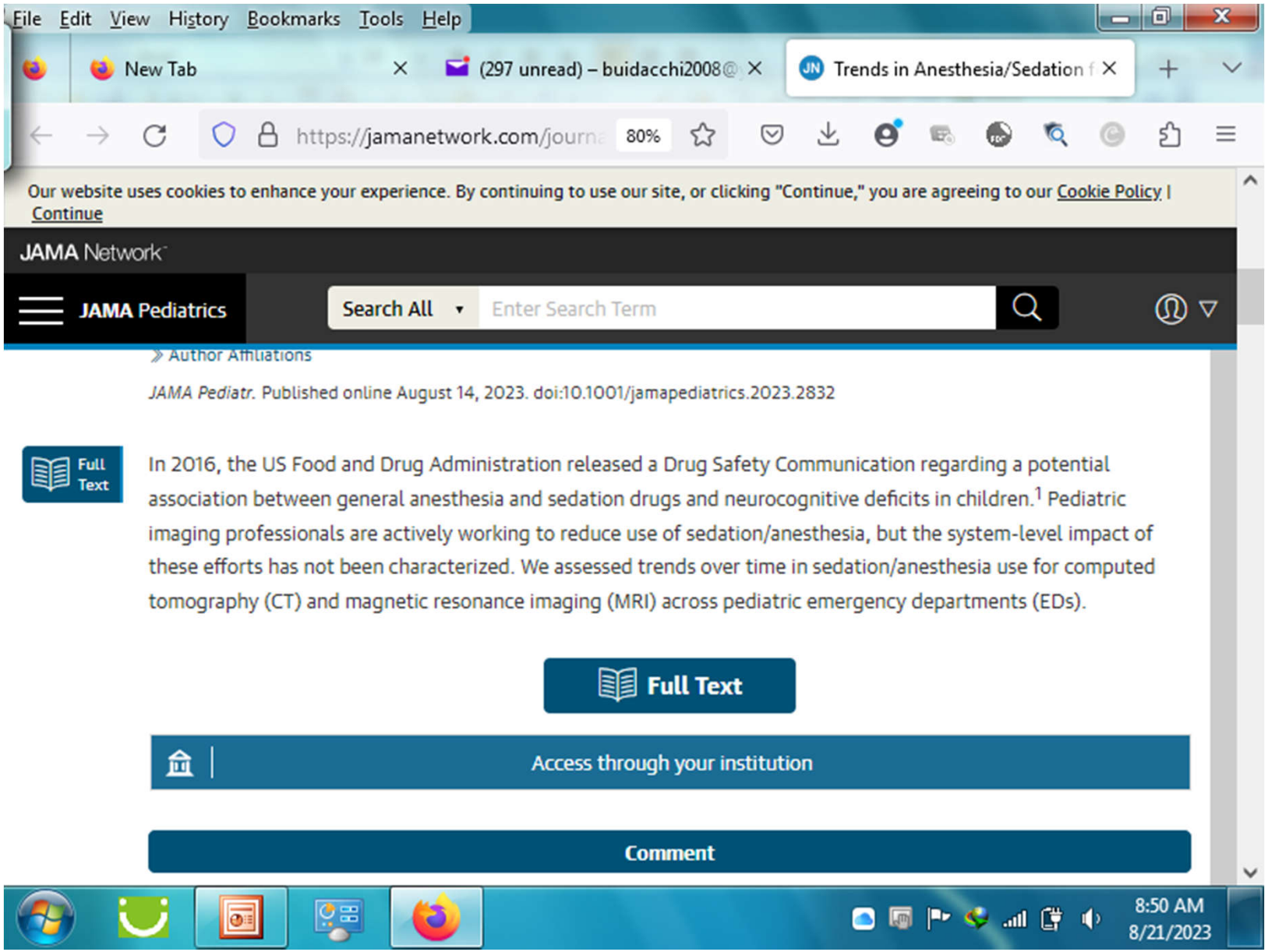
ONLI

August 14, 2023

Trends in Anesthesia/Sedation for Computed Tomography and Magnetic Resonance Imaging Encounters in Pediatric Emergency Departments, 2012-2022

Shireen E. Hayatghaibi, PhD[1]; Ali I. Kandil, MD[2]; Bin Zhang, PhD[3]; et al

In 2016, the US Food and Drug Administration released a Drug Safety Communication regarding a potential association between general anesthesia and sedation drugs and neurocognitive deficits in children.[1] Pediatric imaging professionals are actively working to reduce use of sedation/anesthesia, but the system-level impact of these efforts has not been characterized. We assessed trends over time in sedation/anesthesia use for computed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JAMA Pediatr. Published online August 14, 2023. doi:10.1001/jamapediatrics.2023.2832
Full Text
In 2016, the US Food and Drug Administration released a Drug Safety Communication regarding a potential association between general anesthesia and sedation drugs and neurocognitive deficits in children.[1] Pediatric imaging professionals are actively working to reduce use of sedation/anesthesia, but the system-level impact of these efforts has not been characterized. We assessed trends over time in sedation/anesthesia use for computed tomography (CT) and magnetic resonance imaging (MRI) across pediatric emergency departments (EDs).
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Annals of Internal Medicine®

Original Research | 8 August 2023

Estimating Breast Cancer Overdiagnosis After Screening Mammography Among Older Women in the United States

Ilana B. Richman, MD, MHS, Jessica B. Long, MPH, Pamela R. Soulos, MPH, Shi-Yi Wang, MD, PhD, and

This study was designed to estimate overdiagnosis, limiting our ability to draw conclusions on all benefits and harms of screening. Unmeasured differences in risk for breast cancer and differential competing mortality between screened and unscreened women may confound results. Results were sensitive to model specifications and definition of a screening mammogram.

Conclusion:

Continued breast cancer screening was associated with greater incidence of breast cancer, suggesting overdiagnosis may be common among older women who are diagnosed with breast cancer after screening. Whether harms of overdiagnosis are balanced by benefits and for whom remains an important question.

Remote and Short-Term Prediction of Spontaneous Hepatitis B Surface Antigen Seroclearance

Dear Editors:

The recent study of Tseng et al[1] on the kinetics of hepatitis B core-related antigen (HBcrAg) may provide a new insight into the remote prediction of spontaneous hepatitis B surface antigen (HBsAg) seroclearance. However, several points require clarification or further discussion.

First, it has been well documented that spontaneous HBsAg loss invariably occurs after hepatitis B e antigen (HBeAg) seroconversion and an HBeAg-negative inactive phase of 10–15 years.[2] The findings of earlier HBcrAg decline with a time lag of 10–14 years before HBsAg seroclearance may coincide with those of spontaneous HBeAg seroconversion. Conceivably, before HBeAg seroconversion, HBeAg-positive patients are not candidates for HBsAg loss. In addition, because HBeAg is the most predominant component of HBcrAg, HBeAg-positive patients have high HBcrAg levels with a median of up to 8–9 $\log_{10}$ IU/mL vs 2–4.5 $\log_{10}$ in HBeAg-negative patients.[3] Hence, including HBeAg-positive patients in the analyses with HBcrAg $\geq$ 5 $\log_{10}$ IU/mL as a reference may create bias by inadvertently positive predictive values in predicting HBsAg loss within 1–3 years.[5,6] Obviously, short-term prediction of HBsAg loss within a much shorter period of 1–3 years is more relevant and useful in daily clinical practice than remote prediction described in this study.

In conclusion, this study supports HBcrAg as a remote predictor for HBsAg loss. However, some issues need to be clarified. In clinical settings, the sensitivity, specificity, reproducibility, and expected high market price as compared with quantitative HBsAg assay are concerns of the HBcrAg assay. This is also a limitation of the study to be discussed.

CHENG-ER HSU
Department of Gastroenterology and Hepatology
Chang Gung Memorial Hospital
Linkou Medical Center
Taoyuan, Taiwan

YUN-FAN LIAW
Liver Research Unit
Chang Gung Memorial Hospital
Taoyuan, Taiwan, *and*
College of Medicine
Chang Gung University
Taipei, Taiwan

THE END