

## RADIOLOGY

S. No.	Topic
<b>Observational (Descriptive)</b>	
1.	Role of Magnetic Resonance Imaging (MRI) in assessing treatment response in children with tubercular mediastinal adenopathy after anti-tubercular treatment.
2.	An imaging based etiological sub-classification of primary central nervous system demyelinating disorders.
3.	Magnetic Resonance spectroscopic evaluation of neurometabolic disorders in neonates and infants.
4.	Leukodystrophies- Clinical correlates of magnetic resonance (MR) imaging characteristics.
5.	Role of Magnetic Resonance imaging in parasitic cerebral infections.
6.	Traumatic brain injury-outcome prediction with initial Computed Tomography (CT) imaging.
7.	Evaluation of Breast density patterns on mammographic screening of Indian women.
8.	Role of vesical Imaging-Reporting and Data System (VI-RADS) in Predicting clinical outcomes in bladder lesions: A comprehensive analysis.
9.	Role of Whole body Magnetic Resonance Imaging (MRI) in the evaluation of pyrexia of unknown origin (PUO).
10.	To investigate the role of Positron emission tomography and computed Tomography (PET-CT) imaging in monitoring the disease recurrence in ovarian cancer in cases with elevated CA-125 levels; A retrospective study.
11.	Study the radiological characteristics and imaging features of benign and malignant bone tumors, aiming to develop diagnostic criteria and guidelines for accurate differentiation.

<b>Observational (Analytical)</b>	
12.	Comparison of success and complications rates of pneumatic and hydrostatic reduction of idiopathic ileocolic intussusception in children.
13.	Comparison of Contrast Enhanced Computed Tomography (CECT) and Ultrasonography (USG) in the evaluation of bowel wall abnormalities in the ileocecal region.
14.	Comparison of Ultrasonography (USG) and Magnetic Resonance Imaging (MRI) in the evaluation of spinal dysraphism in infants.
15.	Comparison of Computed Tomography (CT) enterography and bowel Ultrasonography (USG) in assessing the response to therapy in patients with ileocecal tuberculosis.
16.	Comparison of Ultrasonography (USG) and contrast enhanced computed tomography (CECT) in the evaluation of mediastinal adenopathy in children.
17.	Comparison of intraoral ultrasound and contrast enhanced magnetic resonance imaging (CEMRI) for depth of invasion in oral cancer with histopathology as the Gold Standard.
18.	Correlation of ultrasound shear wave elastography measurements of liver with liver fibrosis on histopathology in patients with cirrhosis.
19.	Comparison of contrast enhanced magnetic resonance imaging (CEMRI) staging of carcinoma cervix with clinical examination with histopathology as gold standard.
20.	To assess the correlation between Vesical Imaging-Reporting and Data System (VI-RADS) scores and histopathological findings in bladder lesions.
21.	Role of imaging modalities and clinical correlation in the assessment of minimal hepatic encephalopathy in patients with chronic liver disease-Metabolic dysfunction-associated steatotic liver disease (MASLD).
22.	To explore the utility of Multiparametric magnetic resonance imaging (MRI) in enhancing the accuracy and depth of grading and characterizing paediatric brain tumors.

23.	Comparison of ultrasound and magnetic resonance imaging (MRI) in diagnosis of shoulder joint disorders.
24.	Comparison of chest X-ray and chest ultrasound in patients under critical care.
25.	To assess the efficacy of Computed Tomography (CT) scans to quantify and analyse lung parenchymal long-term changes in COVID-19 patients, assessing the potential of these changes as prognostic indicators: A retrospective study.
26.	To correlate ultrasonography (USG) & proton density fat fraction (PDFF) in liver steatosis.
27.	To compare the accuracy of different methods for determining bone age in pediatric patients using hand and wrist radiographs, helping clinicians in assessing growth and development.
28.	Comparison of computed tomography- and magnetic resonance imaging-based clinical target volume contours at brachytherapy for cervical cancer.
29.	Correlation of clinico-pathologic and radiologic parameters of response to neoadjuvant chemotherapy in breast cancer.
30.	Assess the diagnostic accuracy and patient acceptability of computed tomography (CT) colonography as a non-invasive method for colorectal cancer screening and comparing it with traditional colonoscopy.
31.	Examine the accuracy of ultrasound in detecting and characterizing kidney stones as a cause of abdominal pain, and explore the role of color Doppler ultrasound in evaluating renal blood flow in patients with renal colic.
32.	Contrast-enhanced computed tomography abdomen versus diagnostic laparoscopy-based management in patients with penetrating abdominal trauma.
<b>Experimental</b>	

33.	To evaluate the utility of uterine artery Doppler ultrasound in assessing uteroplacental blood flow dynamics.
34.	Assess the diagnostic accuracy of proton magnetic resonance spectroscopy (1H-MRS) in identifying temporal lobe epilepsy.
35.	Transperineal ultrasound in the characterization of ambiguous genitalia.
36.	Magnetic resonance imaging (MRI) as an alternative follow-up imaging modality in bronchiectasis in children.
37.	Use of lung ultrasound in the detection of pediatric community-acquired pneumonia.
38.	Role of pre-operative computed tomography (CT) scan in management of carcinoma of ovary.
39.	Role of ultrasound in diagnosis and management of symptomatic breasts.
40.	Evaluation of safety and efficacy of ultrasound guided catheter drainage of pleural effusion.
41.	To investigate the effectiveness of ultrasound imaging, including color Doppler, in detecting early-stage ovarian cancer and differentiating malignant from benign ovarian masses among individuals with familial breast ovarian syndrome.
42.	To explore the use of multiple imaging modalities, such as Computed Tomography, and ultrasound, in improving the accuracy of diagnosing ovarian cancer and characterizing tumor characteristics.
43.	To evaluate the diagnostic accuracy of contrast-enhanced ultrasound in characterizing focal hepatic lesions, particularly in patients with chronic renal failure.
44.	To explore the use of diffusion-weighted Magnetic Resonance Imaging to quantitatively assess cellular density and tissue microstructure for characterizing the indeterminate adnexal masses.

45.	To explore the use of Magnetic Resonance Imaging (MRI) in detecting early signs of osteoarthritis in weight-bearing joints and correlating it with pain score.
46.	To analyze the imaging features of thyroid nodules using ultrasound or Computed Tomography scans and develop a predictive model for distinguishing between benign and malignant nodules.
47.	Investigating accuracy and reproducibility of vertebral fracture assessment (VFA) and quantitative morphometry in diagnosing and grading osteoporotic fractures and vertebral deformities.
48.	Examine the utility of Dual-energy X-ray Absorptiometry (DXA) scan in monitoring bone mineral density changes in comparison with Computed Tomography (CT) scan in patients aged more than 55 years.
49.	To investigate the feasibility of using ultrasound-based elastography techniques to assess liver fibrosis in patients with chronic liver disease, potentially offering a non-invasive alternative to liver biopsy.
50.	Investigate the role of transcatheter embolization for controlling haemorrhage or endovascular repair of traumatic vascular injuries.
51.	Evaluate the effectiveness of transvaginal ultrasound for serial monitoring and follow-up of ovarian lesions, assessing changes in lesion size, morphology and vascularity over time to guide clinical management decisions.
52.	Examine the role of transvaginal ultrasound (TVS) in diagnosing and quantifying the features of polycystic ovary syndrome (PCOS) and correlate it with the biochemical and clinical criteria for the diagnosis of PCOS.
53.	Role of transvaginal ultrasound in sentinel pelvic node biopsy for gynecologic cancers.
<b>Artificial Intelligence</b>	
54.	Artificial intelligence as a triage system for chest radiography.
55.	Role of artificial intelligence in early detection of breast cancer.

56.	Develop predictive models using machine learning algorithms to assess an individual's risk of developing ovarian cancer based on clinical data, family history, and imaging findings. (Institutes with in-house engineering facilities can undertake this topic).
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