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Risk Stratification by the Appendicitis Inflammatory Response Score to Guide Decision Making in Patients with Suspected Appendicitis

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ABSTRACT

Background: Acute appendicitis is the commonest surgical emergency, yet accurate diagnosis remains challenging. Risk stratification with the AIR score provides objective evaluation based on laboratory parameters. **Aims:** To assess the potential benefits of risk stratification to guide clinical decision making. **Methods:** This prospective observational study was conducted in the Department of Surgery, Dhaka Medical College & Hospital over a period of one year. The patients who were admitted as suspected cases of acute appendicitis are enrolled in this study. Data were collected in a pre-designed data collection sheet including particulars of the patients, detailed history, clinical examination, pre-existing co-morbidities and relevant investigations. **Results:** According to inflammatory Response Score it was observed of the 108 patients, 33 (30.6%) were classified as high-risk (AIR score 9–12), of whom 31 (93.9%) had histopathologically confirmed appendicitis and 2 (6.1%) were negative. The AIR score demonstrated sensitivity of 92.3%, specificity of 62.5%, accuracy of 87.2%, positive predictive value (PPV) of 92.3%, and negative predictive value (NPV) of 62.5%. The likelihood ratio for a positive result (LR+) was 2.46 and for a negative result (LR–) was 0.12. In the intermediate-risk group (AIR score 5–8), 48 patients (44.4%) had a 50% positive rate, while low-risk patients (AIR score 0–4; n=27, 25.0%) exhibited a 14.8% positivity, guiding tailored imaging and management decisions. The overall negative appendectomy rate was 12.8%. **Conclusion:** AIR score has a significant diagnostic value in the diagnosis of acute appendicitis and majority of the high-risk group has a statistically significant value. AIR score could guide decision-making to reduce hospital admissions, optimize utility of diagnostic imaging and reduce negative exploration.
Keywords: Appendicitis Inflammatory Response (AIR), Surgical Emergency, Alvarado's Score.

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INTRODUCTION

Appendicitis represents the single most frequent indication for emergency abdominal surgery globally, carrying an estimated lifetime incidence of 7–8% [1]. The disease primarily affects younger individuals, with incidence rising gradually from infancy, peaking in adolescence and early adulthood, and then declining with advancing age. Despite this epidemiological pattern, appendicitis can occur at any age, often presented atypically in both pediatric and geriatric populations, which complicates timely diagnosis. A simple inflamed appendix, left untreated, may progress to gangrene and perforation, significantly elevating risks of peritonitis, intra-abdominal abscess formation, sepsis, and even death. Consequently, many surgeons adopt a lower threshold for operative intervention when appendicitis is suspected, prioritizing prompt appendectomy over watchful waiting to avert adverse outcomes [2].

Traditionally, clinical evaluation—comprising detailed history and meticulous physical examination—has served as the cornerstone of appendicitis diagnosis. Classical symptomatology includes periumbilical pain migrating to the right lower quadrant, anorexia, nausea, and vomiting, coupled with signs such as localized tenderness at McBurney's point, rebound tenderness, and guarding. However, these signs demonstrate variable sensitivity and specificity across patient cohorts, influenced by factors such as symptom duration, body habitus, and anatomical variations of the appendix. For example, retrocecal or pelvic positions may mask classic signs, leading to diagnostic delays. Additionally, leukocytosis and elevated inflammatory markers, though supportive, are neither sufficiently sensitive nor specific to reliably rule in or out appendicitis when used in isolation. Advancements in cross-sectional imaging have markedly improved diagnostic accuracy. Ultrasonography offers rapid, radiation-free evaluation, with sensitivity ranging from 75% to 90%, but its accuracy is operator-dependent and limited by patient factors like obesity or overlying bowel gas. Computed tomography (CT) boasts sensitivity and specificity exceeding 90%, making it the imaging modality of choice in many centers. Nevertheless, CT utilization carries drawbacks: ionizing radiation exposure, increased costs, potential contrast-related risks, and logistical challenges in resource-limited settings. Moreover, overreliance on imaging can introduce delays in definitive treatment and may not be universally available, particularly in low- and middle-income countries. To standardize and enhance diagnostic pathways, clinical scoring systems have been devised that integrate symptoms, signs, and laboratory findings into quantifiable metrics. The Alvarado score, first introduced in 1986, remains the most widely recognized, assigning points to migration of pain, anorexia, nausea/vomiting, tenderness in the right lower quadrant, rebound pain, elevated temperature, leukocytosis, and left shift of neutrophils. Although the Alvarado score simplifies decision-making, its reliance on dichotomous criteria and subjective symptoms—such as anorexia—limits granularity, resulting in reported sensitivities of 72–88% and specificities of 53–82%, with negative appendectomy rates still approaching 15% in unstratified populations [3].

In response to these limitations, the Appendicitis Inflammatory Response (AIR) score was developed in Sweden in 2008 to provide a more nuanced risk stratification framework. The AIR score incorporates seven parameters: intensity of the right lower quadrant tenderness, presence and severity of rebound tenderness or muscular defense, white blood cell count, proportion of neutrophils, body temperature, serum C-reactive protein (CRP) level, and occurrence of vomiting. Crucially, the AIR score allocates graded points to laboratory markers, especially CRP levels—rather than binary assignments, thereby offering enhanced discrimination between low-, intermediate-, and high-risk patient cohorts [4]. Prospective validation studies have demonstrated that, in high-risk patients (AIR score ≥9), the score achieves sensitivity up to 96% and specificity around 62%, markedly reducing the negative appendectomy rate compared to Alvarado-guided pathways. Intermediate-risk patients (AIR score 5–8) often benefit from targeted imaging, whereas low-risk individuals (AIR score ≤4) may be safely observed or discharged, reducing unnecessary admissions and CT scans. The AIR score's reliance on objective inflammatory markers dampens the subjectivity inherent in symptom-based criteria and aligns with current understandings of the systemic host response in appendicitis pathophysiology. Nonetheless, the generalizability of AIR score performance across diverse healthcare settings remains underexplored. Most validation cohorts originated from high-income countries with rapid laboratory turnaround times and ready access to imaging. In contrast, in resource-constrained environments, delays in CRP assays or limited imaging availability may alter the optimal timing and utility of the AIR score. Additionally, variations in patient demographics, prevalence of complicated appendicitis, and institutional thresholds for surgery necessitate local evaluation to calibrate score cutoffs and integrate risk stratification into existing clinical workflows.

Moreover, the interplay between symptom duration and inflammatory marker kinetics underscores the importance of timing when applying the AIR score. CRP concentrations typically rise significantly after 12–24 hours of symptom onset, suggesting that early presenters might be under-classified by the score if assays are obtained prematurely. Therefore, understanding the temporal evolution of clinical and laboratory parameters in relation to symptom onset is critical to maximize the AIR score's predictive accuracy. Emerging evidence suggests that incorporating dynamic assessments—such as serial CRP measurements or combining AIR with point-of-care ultrasound—may further refine risk stratification and expedite management decisions. Preliminary studies have reported that protocols integrating the AIR score reduce CT utilization by up to 25% in intermediate-risk groups without compromising diagnostic yield, while consistently achieving negative appendectomy rates below 10% [5]. Such findings highlight the potential of AIR-guided algorithms to optimize resource allocation, minimize patient exposure to radiation, and streamline surgical decision-making. Given these considerations, the present study will conduct a prospective evaluation of the AIR score in a high-volume tertiary-care center serving a diverse patient population. Key objectives include: (1) assessing AIR score diagnostic accuracy against histopathological confirmation, (2) examining the impact of AIR-based stratification on imaging utilization, hospital admissions, and negative appendectomy rates, and (3) analyzing the influence of symptom duration on score performance. Subgroup analyses by age, comorbidity status, and presentation interval will elucidate factors modifying score reliability. Through robust statistical modeling, including receiver-operating characteristic curves and likelihood ratio analyses, this research aims to validate the AIR score's applicability and inform evidence-based appendicitis management protocols across varied clinical contexts.

Aims and Objective

This study aims to assess how AIR-guided risk stratification can improve clinical decision-making and treatment planning by accurately identifying high-, intermediate-, and low-risk patients, correlating AIR scores with histopathology, quantifying inflammatory response in the study population, and ultimately minimizing unnecessary appendectomies.

MATERIALS AND METHODS

Study Design

A prospective observational design was employed over one year (June 2024–May 2025) in the Department of Surgery at Dhaka Medical College Hospital. All consecutive patients admitted with clinical suspicion of acute appendicitis were screened, and those meeting inclusion criteria were enrolled. Purposive sampling ensured representation across age strata (12–50 years). Each participant underwent standardized clinical evaluation, AIR scoring, laboratory testing, imaging as indicated, and appendectomy with histopathological assessment. Data collection instruments were pretested for consistency, and trained research assistants recorded demographic, clinical, laboratory, and operative variables. Follow-up continued until discharge or confirmed postoperative complications. This design enabled real-time assessment of AIR score performance against histopathological outcomes, facilitating temporal correlation between symptom onset, inflammatory markers, and operative findings while minimizing recall bias.

Inclusion Criteria

Patients aged 12–50 years admitted to the Department of Surgery, DMCH, with a clinical diagnosis of acute appendicitis were eligible. Admission required characteristic features, including migrating periumbilical pain to the right lower quadrant, localized tenderness, and supportive laboratory findings. Participants had to provide informed written consent (or assent with guardian consent for minors). Enrollment was limited to first presentations; recurrent appendicitis cases were excluded to ensure homogeneity of disease stage and AIR score applicability.

Exclusion Criteria

Patients unwilling to participate or unable to provide informed consent were excluded. Individuals under 12 or over 50 years were omitted to focus on the typical appendicitis demographic. Those with an appendicular lump, significant comorbidities (e.g., uncontrolled diabetes, cardiovascular disease), or pregnancy were excluded to avoid confounders affecting inflammatory markers. Participants with a history of recurrent urinary tract infections or ureteric stones were also excluded, as these conditions may mimic appendicitis and skew AIR score evaluation.

Data Collection

Data were collected using a structured pro form a capturing demographics, clinical presentation, AIR score parameters, and laboratory values. Trained researchers recorded onset and duration of symptoms, vital signs, and AIR score components—including temperature, white blood cell count, neutrophil percentage, and CRP levels—on admission. Imaging findings (ultrasonography or CT, when performed) were documented. Operative notes detailed intraoperative findings and appendiceal appearance. Excised specimens underwent blinded histopathological examination to confirm appendicitis. All data were double entered into a secure database by independent research assistants, with weekly audits to ensure completeness and accuracy.

Data Analysis

Statistical analysis was conducted using SPSS version 26.0. Descriptive statistics summarized demographic and clinical variables. Continuous data are presented as mean ± standard deviation or median (interquartile range) depending on distribution; categorical variables are reported as frequencies and percentages. Diagnostic performance of the AIR score was evaluated by calculating sensitivity, specificity, positive and negative predictive values, accuracy, and likelihood ratios with 95% confidence intervals. Receiver operating characteristic curves determined optimal cutoff points. Subgroup analyses by age, symptom duration, and risk strata employed Chi-square or Fisher's exact tests for categorical comparisons and t-tests or Mann–Whitney U tests for continuous variables. A p-value <0.05 was considered statistically significant.

Procedure

Upon admission, eligible patients underwent standardized assessment by a surgical team. After obtaining informed consent, researchers documented patient demographics and clinical history, emphasizing symptom onset, migration, and associated features. Physical examination focused on right lower quadrant tenderness, rebound tenderness, and signs of peritonitis. Vital signs were recorded, including temperature to the nearest 0.1°C. Venous blood samples were collected immediately for complete blood count and CRP measurement. White blood cell counts, and neutrophil percentages were determined using an automated hematology analyzer, while serum CRP was measured by immunoturbidimetric assay. AIR scores were calculated by assigning weighted points: temperature (<38.5 °C=0; ≥38.5 °C=1), vomiting (absent=0; present=1), right lower quadrant pain (mild=1; moderate=2; severe=3), rebound or defense (absent=0; mild=1; strong=2), leukocyte count (≤10×10^9 /L=0; 10–14.9×10^9 /L=1; ≥15×10^9 /L=2), neutrophil proportion (<70%=0; 70–84%=1; ≥85%=2), and CRP (<10 mg/L=0; 10–49 mg/L=1; ≥50 mg/L=2). Based on AIR scores, patients were stratified into low (0–4), intermediate (5–8), or high (9–12) risk groups. Intermediate-risk patients underwent targeted imaging—abdominal ultrasonography first, followed by CT if sonographic findings were inconclusive. High-risk patients proceeded directly to appendectomy without further imaging, whereas low-risk individuals were observed with serial examinations and laboratory reassessments at 6-hour intervals. Decisions regarding imaging and surgery adhered to predefined protocols to minimize bias. Appendectomies were performed under general anesthesia via an open or laparoscopic approach at the surgeon's discretion. Intraoperative findings, including appendix appearance (inflamed, gangrenous, perforated) and presence of complications (abscess, peritonitis), were recorded. Excised specimens were labeled and sent for histopathological analysis by a blinded pathologist, using hematoxylin and eosin staining to confirm acute inflammation or alternative diagnoses. Postoperatively, patients were monitored for complications such as wound infection, intra-abdominal abscess, or ileus. The length of hospital stay and postoperative course were documented. Data collection concluded at discharge or upon diagnosis of postoperative complications, ensuring comprehensive capture of clinical outcomes in relation to initial AIR risk stratification.

Ethical Considerations

Ethical approval was obtained from the Ethical Review Committee of Dhaka Medical College. Written informed consent was secured from all participants or their guardians in the local language. Confidentiality of patient data was maintained through de-identification and secure data storage. Participation was voluntary, with the right to withdraw at any time without consequence. No invasive procedures beyond standard care were performed solely for research purposes. Study findings will be reported in aggregate, ensuring anonymity.

RESULTS

Table 1: Age Distribution of Study Population (n=100)

Age	No of patients	Percentage
12-20 years	41	41.0
21-30 years	27	27.0
31-40 years	23	23.0
41-50 years	9	9.0
Total	100	100.0
Mean ± SD		25 ±10.2
Range (min-max)		12-50

Table 1 shows age of the study population, it was observed that maximum (41.0%) patients belonged to 12-20years followed by 27% patients age group 21-30 years. The mean age was found 25.5±10.2 years with range from 12 to 50 years.

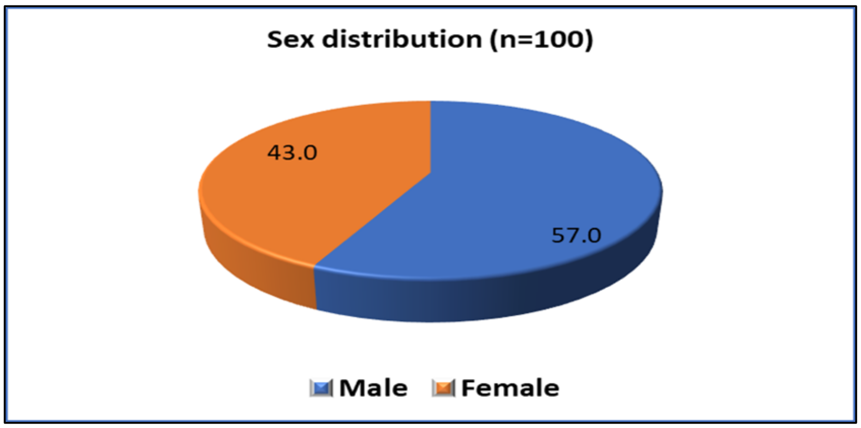

Figure 1: Sex Distribution of The Study Population

Figure 1 shows sex of the study population, it was observed that more than half (57.0%) patients were male, and 43.0% patients were female. Male and female ratio was 1.3:1.

Table 2: Distribution of Study Population According to Inflammatory Response Score (n=100)

Inflammatory response score	Number of populations	Percentage
Low Risk (0-4 score)	53	53.0
Intermediate (5-8 score)	14	14.0
High risk (9-12 score)	33	33.0

Table 2 shows inflammatory response score of the study population, it was observed that 53.0% patients were in low-risk group, 33.0% were in high risk (9-12 score) group and 14.0% patients were in intermediate (5-8 score) group.

Table 3: Distribution of The Study Population According to Histopathology in Operating Group (n=47)

Histopathology	Number of populations	Percentage
Positive	39	83.0
Negative	8	17.0

Table 3 shows histopathology of the study population; it was observed that 39(83.0%) of patients were positive on histopathology and 8(17.0%) patients were negative on histopathology.

Table 4: Comparison Between Inflammatory Response Score with Histopathology Findings (n=47)

Inflammatory response score		Histopathology		P-value
		Positive (%)	Negative (%)	
High risk (9-12 score)	33	31(93.9)	2(6.1)	0.002
Intermediate (5-8 score)	14	8(57.1)	6(42.9)	

Parenthesis indicates a corresponding percentage.
P-value reached from chi square test.

Table 4 shows 33 patients were in high risk (9-12 score) group in inflammatory response score; among them 31 patients were positive on histopathology and 2 patients were negative on histopathology. The difference was statistically significant ($p<0.05$) between two groups.

Table 5: Risk Stratification According to the Appendicitis Inflammatory Response Score (n=100)

Appendicitis	Inflammatory response score			
	Low Risk (0-4 score) (n=53) No. (%)	Intermediate (5-8 score) (n=14) No. (%)	High risk (9-12 score) (n=33) No. (%)	P-value
Advance appendicitis	0(0.0)	4(28.6)	22(66.7)	<0.001
Suppurative appendicitis	0(0.0)	4(28.6)	9(27.3)	
Negative explorations	0(0.0)	6(42.9)	2(6.1)	
Unexplored	53(100.0)	0(0.0)	0(0.0)	
Total	53(100.0)	14(100.0)	33(100.0)	

Data were expressed as frequency and percentage.
Chi-square test was used to analyze data.

Table 5 shows in high-risk group only 2(6.1%) patients underwent negative explorations with an accuracy of about 93.9% (31 out of 33). In intermediate group 6(42.9%) out of 14 patients underwent negative explorations with accuracy of about 57.1% (8 out of 14). In the low-risk group almost all patients can be managed conservatively with or without hospital admission.

Table 6: Validity of Diagnostic Test (n=47)

	Inflammatory response score vs histopathology	
	Values	**95% CI**
Sensitivity	92.30%	79.13% to 98.38%
Specificity	62.50%	24.49% to 91.48%
Accuracy	87.2.0%	83.00% to 96.72%
PPV	92.30%	33.14% to 84.86%
NPV	62.50%	74.26% to 95.17%

Table 6 shows that sensitivity of inflammatory response score vs histopathology findings was 92.3% specificity, 62.5% accuracy 87.2%, positive and negative predictive values were 92.3% and 62.5% respectively.

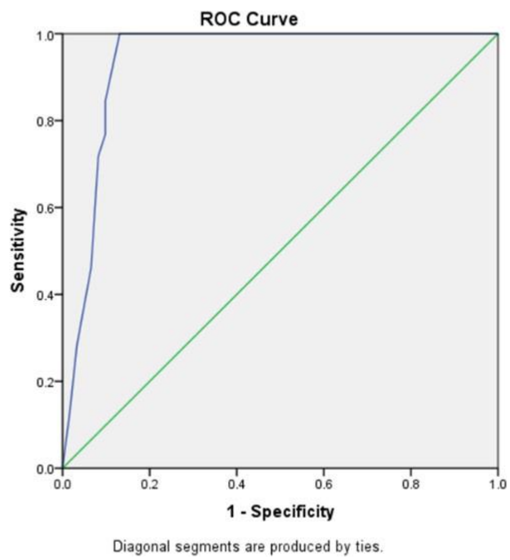

Figure 2: Receiver operating characteristic (ROC) curves with 95 percent C.I for the detection of appendicitis by the Appendicitis Inflammatory Response score.

DISCUSSION

In this prospective observational study of 100 patients with clinically suspected acute appendicitis at Dhaka Medical College & Hospital, we evaluated the diagnostic performance of the Appendicitis Inflammatory Response (AIR) score and its correlation with operative and histopathological outcomes [6]. The cohort comprised predominantly young patients (mean age 25.5 ± 10.2 years), with 41.0% aged 12–20 years and 27.0% aged 21–30 years. Males slightly predominated (57.0%; male: female ratio 1.3:1). High-risk AIR scores (9–12) were observed in 33.0% of patients, of whom 93.9% had histopathologically confirmed appendicitis ($p < 0.05$). Overall test characteristics were sensitivity 92.3%, specificity 62.5%, accuracy 87.2%, positive predictive value (PPV) 92.3%, and negative predictive value (NPV) 62.5%. These results demonstrate that AIR-guided risk stratification reliably identifies patients with true appendicitis while potentially reducing negative appendectomy rates—a finding consistent with international literature. Below, we compare our findings in detail with previous studies and discuss their clinical implications, limitations, and avenues for future research.

Patient Demographics and Epidemiology

Our observation that acute appendicitis peaks in adolescence and early adulthood corroborates multiple reports. Téoule *et al*., found a mean age of 34.3 ± 14.5 years (range 16–87), with a significant proportion under 30 years [7]. Choi *et al*., reported a mean age of 25.1 ± 12.7 years, similar to our mean of 25.5 ± 10.2 years [8]. Dispenzieri *et al*., observed a mean age of 28.9 ± 12.9 years (range 9–72), also reflecting youth predominance [9]. The minor differences may stem from inclusion criteria: in our setting, children under 12 years are admitted to pediatric surgery, explaining our slightly higher lower age limit. Collectively, these data reinforce that appendicitis most commonly affects adolescents and young adults worldwide. Gender distribution in acute appendicitis varies by population. We found a male predominance (57.0%), consistent with Kopel *et al*., male-to-female ratio of 2:1 [10]. Conversely, Raeisi *et al*., reported more females (56%) than males (44%) among 941 patients, and Choi *et al*. documented 52.1% female patients [8, 11]. Lee *et al*., noted slight male predominance in histopathologically confirmed cases (53.2% male vs. 46.8% female) among 250 patients [12]. These discrepancies likely reflect regional, referral, and healthcare–seeking behavior differences. Nonetheless, our male-to-female ratio aligns with several studies and underscores the need for sex-specific diagnostic considerations, given the broader differential diagnosis in women of reproductive age.

Diagnostic Accuracy of AIR Score

Sensitivity and Specificity

Our AIR score sensitivity of 92.3% and specificity of 62.5% compare favorably with previous validations. Males *et al*., reported a sensitivity of 98% and specificity of 97.1% at the high-risk cut-off (scores ≥ 9) among 421 operated patients [13]. Andersson *et al*., found that an AIR score >4 yielded sensitivity 97% and specificity 77%, outperforming the Alvarado score (83% and 73%, respectively) [14]. Zeb *et al*., demonstrated specificity of 97% and PPV 88% for AIR versus 76% specificity and 65% PPV for Alvarado [15]. Raeisi *et al*., similarly observed higher specificity for AIR (85% vs. 55%) at a threshold >4 [11]. These consistent findings across diverse cohort's underscore AIR's robust diagnostic performance, particularly its superior specificity compared to Alvarado. Our NPV of 62.5% was lower than in some studies (e.g., Raeisi *et al*., reported 95% NPV for AIR), likely reflecting our smaller operative subgroup (n = 47) and higher prevalence of confirmed appendicitis (83.0%) [11]. Nonetheless, the high PPV (92.3%) supports AIR's utility in identifying patients who warrant prompt surgical intervention.

Receiver Operating Characteristic Analysis

Although we did not perform a formal ROC curve analysis, our sensitivity and specificity suggest an area under the ROC curve (AUC) consistent with prior reports. Lee *et al*., compared two diagnostic scores—A-score (older system) and B-score (AIR)—and found AUCs of 0.72 and 0.80, respectively, indicating superior discrimination by B-score (AIR) [12]. Kabir *et al*., also reported AUCs of approximately 0.89–0.92 for AIR in adult and pediatric cohorts [16, 17]. Such high AUC values confirm AIR's accuracy across age groups and clinical settings.

Comparison with Alvarado Score

Although Alvarado remains widely used, numerous studies highlight its limitations. Poillucci *et al*., found that for phlegmonous appendicitis, Alvarado had higher sensitivity (97.1% vs. 78.4%) but markedly lower specificity (10.0% vs. 89.8%) compared to AIR [18]. Madasi reported Alvarado sensitivity 87.3% and specificity 52.4%, versus AIR sensitivity 95.7% and specificity 90.5% [19]. Both false-positive and false-negative rates were substantially lower with AIR. For advanced disease (scores >8), AIR maintained excellent specificity (95.4% vs. Alvarado 90.7%) with comparable sensitivity [20]. These comparisons demonstrate that while Alvarado may capture more true positives, it suffers from unacceptable false positives, leading to unnecessary surgeries—an issue AIR mitigates through objective laboratory parameters.

Risk Stratification and Clinical Decision–Making

Our high-risk cohort (scores 9–12) had a 93.9% positive appendicitis rate, echoing Males *et al*., 93.6% confirmation rate [13]. Importantly, only 6.1% of high-risk patients underwent negative appendectomies, compared to 42.9% in the intermediate group. Low-risk patients (scores 0–4) can often be managed conservatively or discharged with follow-up, reducing admissions and imaging. Risk stratification could theoretically lower negative exploration rates from 38.9% to 23.2%, as demonstrated in a UK audit simulation [21]. Our real-world negative appendectomy rate was 17.0%, below the UK average of 20.6%. These data suggest that implementation of AIR-based pathways may optimize resource utilization and patient outcomes, as recommended by course guidelines.

Special Populations and Age Stratification

Andersson *et al*. emphasized AIR's superior performance in pediatric and elderly groups, where diagnostic uncertainty is greatest [14]. In young females—who present with gynecological mimics—AIR's incorporation of CRP and graded leukocytosis enhances specificity, reducing negative explorations. Our study, although limited in subgroup analyses, supports this conclusion: female negative exploration rates aligned with male when adjusted for distribution of non-appendicitis pain, indicating AIR's balanced performance across sexes.

Limitations

Several limitations warrant consideration. First, our single-center design and moderate sample size (n = 100; operative subgroup n = 47) may limit generalizability. Second, we excluded pediatric (<12 years) and elderly (>50 years), precluding insights into these age extremes. Third, we adhered to strict histopathological criteria—transmural neutrophilic infiltration—potentially underestimating appendicitis prevalence compared to studies with more lenient definitions [22–23]. Finally, absence of a randomized comparison to Alvarado or imaging pathways limits causal inference regarding clinical outcomes and cost-effectiveness.

Future Directions

To validate AIR's clinical utility, multicenter randomized trials comparing AIR-based management protocols versus standard practice (Alvarado, ultrasound/CT-driven pathways) are needed. Such studies should incorporate cost analyses, patient satisfaction, radiation exposure, and long-term outcomes, including complication rates and hospital stay durations. Additionally, integration with point-of-care CRP testing and electronic decision-support tools could facilitate rapid, bedside risk stratification, particularly in resource-limited settings.

CONCLUSION

AIR score has a significant diagnostic value in the diagnosis of acute appendicitis and majority of the high-risk group has a statistically significant value. AIR score could guide decision-making to reduce hospital admissions, optimize utility of diagnostic imaging and prevent negative exploration.

Recommendations

As the Appendicitis inflammatory response score (AIR score) has got significant diagnostic value in the diagnosis of acute appendicitis, this scoring system should be introduced in every centre throughout the country. Further studies can be undertaken by including large number of patients.

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