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Research Article

**AN ILLUSTRATIVE STUDY TO ANALYST THE REACTIVITY
AND RESPONSIVENESS OF ULTRASONOGRAPHY IN
RECOGNIZING THE FACTORS THAT CAUSE ACUTE RIGHT
LOWER QUADRANT PAIN DURING PREGNANCY IN
FEMALES**¹Dr Nobia, ²Dr. Yasaan Saaqib, ²Dr. Inshal Arshad¹RHC Malka, Gujrat, ²House Officer DHQ Teaching Hospital Gujranwala.**Abstract:**

Objective: The objective of this research study was to analyst the reactivity and responsiveness of ultrasonography in recognizing the factors that lead to the acute right lower quadrant pain in females of child bearing age. The results of surgical treatment should be considered.

Methods: The time duration for this illustrated study was from July to December 2017. The study was organized at Services Hospital, Lahore. The females selected for this study who were of child bearing age and were suffering with right lower quadrant pain. These patients experienced surgery post to ultrasonography. For statistical assessment SPSS 21 was used.

Results: Total patients enrolled for this study were 75. Focal collection of fluid in right lowers quadrant with normal pelvic viscera or seriously inflamed in mobile appendix was diagnosed in 54 (72%) patients. Specificity and reactivity were measured as 94% and 84% respectively.

Conclusion: The study concluded that ultrasound was reactive and responsive technique for indications in the emergency conditions. Surgical involvement can be prevented through this method.

Key wards: Pain, Right lower quadrant, Sensitivity, Ultrasonography, Specificity.

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INTRODUCTION:

Any chronic situation can be properly aired by proper identification of condition. Clinical history and laboratory / radiological conditions should be considered while identification. In our country, much significance is given to valuable reactivity. Less than half of the patients suffering with right iliac fossa pain were more than half. Without proper identification, these patients leave hospital. Identification before the operation and suitable treatment can be accessed through imaging studies [2]. The most remarkable technique among all the imaging studies is ultrasonography (USG). USG is very effective in identification of dangerous situations of any sort in patients [3]. Ultrasonography is efficient tool in diagnosis of acute appendicitis in those patients with to right lower quadrant (RLQ) pain [4]. As gynecological disorders are detected by ultrasonography, likewise it is remarkable tool for detection of non-gynecological diseases through which serious RLQ discomfort results [5]. This pain predicts the presence of many other diseases. The range of these disorder is from usual stretching of follicular cyst to such stretching of ectopic pregnancy that could be life taking [6]. Ultrasonography is an advantageous technique. The technique is with no danger and affordable. The objective of this research study was to analyses the reactivity and responsiveness of ultrasonography in recognizing the factors that lead to the acute right lower quadrant pain in females of child bearing age. The results of surgical treatment should be considered.

SUBJECTS AND METHODS:

This research study was organized at the Radiology Department of PNS Shifa Hospital Karachi. The time duration of this illustrative study was from July to December 2008. For this study, samples were selected randomly. Instructional ethical review committee approved the sampling technique. The females choose for this study were of age between 20 to 40 years. The marital status of those females was not considered. These females were with acute RLQ pains and post to ultrasonography, experienced surgery. Those patients who were overweight with poor echo window were not selected for the study. Those patients who didn't experienced surgery and found with histopathological history were also excluded from the study. All the patients were

selected by their choice. From all of these participants written agreement was signed. Functioning of menstrual cycle and last menstrual period (LMP) were measured and registered. Other information of patients was also assembled. This information includes timing of pain, indication and marital status of these patients. By using first 3.5-megahertz curvilinear transducer and secondly with 7-megahertz linear transducer, assessment of USG was done (Toshiba Noemi 20 son graphic scanner). Patients were asked about the information after operation for completion of proforma. By considering surgery as criteria, reactivity of USG was measured. For its measurement, frequency and percentage were measured. For assessment of information, SPSS 10 was used. The calculation was done for the positive and negative predictive values (PPVS), (NPSV). Following formulas is used for the measurement.

$$PPV = TP / TP + FP$$

$$NPV = TN / FN + TN$$

For this research study, false positive (FP) values were those that were "positive sonographically and negative surgically"; True positive (TP) was "positive both surgically and sonographically"; true negative (TN) was "negative both surgically and sonographically" and false negative (FN) was "negative sonographically and surgically positive". (Table – 1)

By considering surgery as a criteria reactivity of USG was checked. For this measurement percentages and frequency was calculated. By using the formula given below, the measurement was done for the negative predictive value (NPV) and positive predictive value (PPV)

$$NPV = TN / FN + TN$$

$$PPV = TP / TP + FP$$

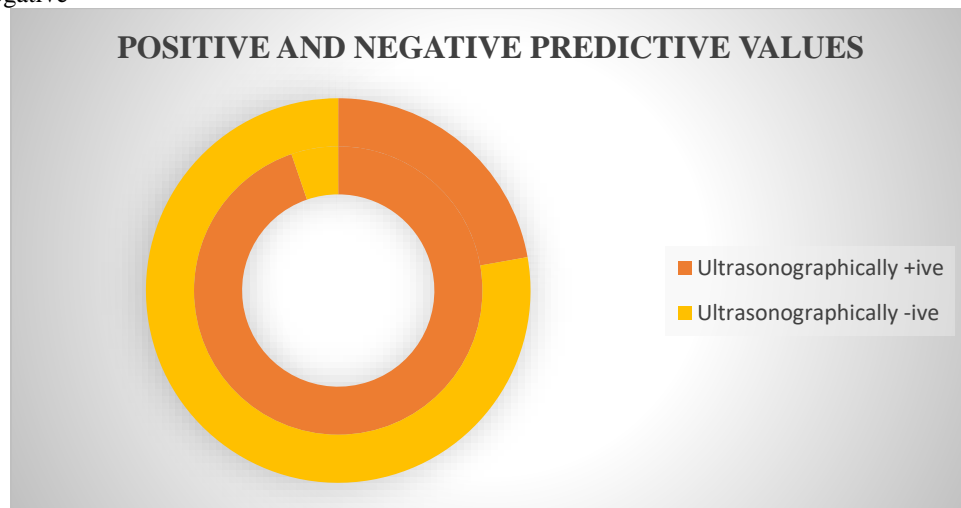
RESULTS:

Total patients enrolled for this study were 75. Out of these, the number of patients who were not married were 28(37%). The patients who had focal fluid gathering or had seriously inflamed incompressible thickened endless appendix were 35(47%). Similarly, simple ovarian cyst and ruptured ovarian cyst was observed in 4(5%) and 5(7%) respectively. Out of the 12 patients remaining, torsion surgically not done sonographically was found in 3(4%) patients 12(16%) patients were observed with ovarian cysts. However, ectopic pregnancy along with a positive pregnancy test with a common record of missed cycle was present 5(7%) patients.

Table No 01: Positive and negative predictive values

Groups	Surgically +ive	Surgically -ive
Ultrasonographically +ive	TP (54)	FP (04)
Ultrasonographically -ive	FN (03)	TN (14)

TP: True positive
 FP: False positive
 TN: True negative
 FN: False negative

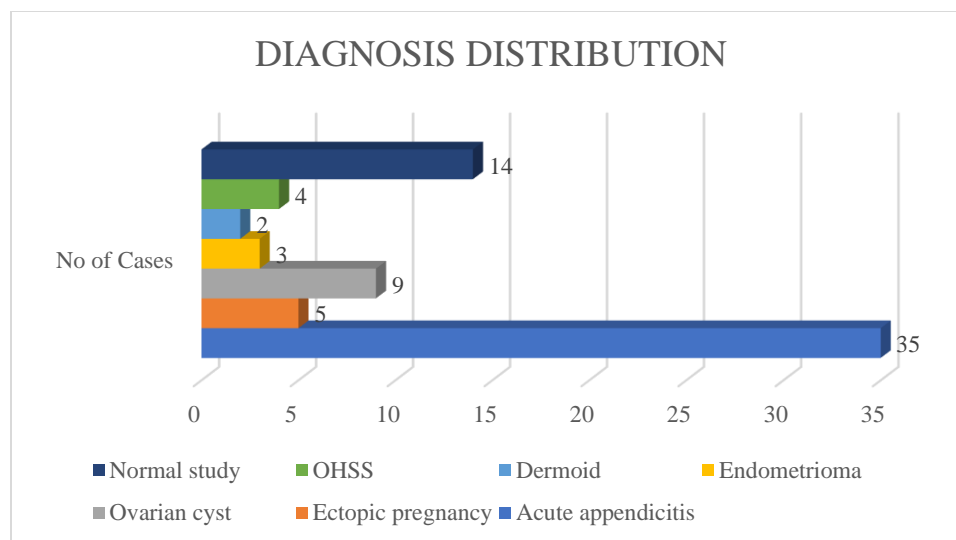


The patients who were not married and observed with acute appendicitis on surgery were 3(4%). These patients were normal sonographically. Moreover, out of total 75 patients, the number of patients who had cystic lesion right adnexal region with small pockets of free fluid in right iliac fossa (RIF) / pelvis had lower abdominal pain or were treated for sterility were 4(5%). Presence of ovarian hyperstimulation syndrome was reported in these patients on USG. However, they were not found with any ectopic disorder.

Ultimately, on USG no positive results were observed in 14(10%) patients. Because of serious clinical diagnosis, they experience surgery. No positive results on surgery were noticed for those patients.

Table No 02: Diagnosis distribution

No of Cases	U/S findings
35	Acute appendicitis
05	Ectopic pregnancy
09	Ovarian cyst
03	Endometrioma
02	Dermoid
04	OHSS
14	Normal study



DISCUSSION:

The common reason that leads to the gynaecological and surgical emergencies is RLQ pain [7]. The origin of disorder can be either certain viscera or pelvis. Ultrasound is a basic technique for wide range indications. It offers many benefits like absence of ionizing radiation, easily approachable, less expensive, and available on wide range. So, for the assessment of pelvis pathology, ultrasound is authentic tool [8]. RLQ discomfort is usually caused by acute appendicitis. In females of reproductive age, acute appendicitis may be followed by series of gynaecological diseases. Usually ectopic pregnancy, hydrosalpinx, ovarian cyst, damage or torsion and Haemorrhage into ovarian cyst are experienced. Due to in valid surgical involvement, complication simultaneously and negative surgeries, incorrect indication results. So, it is necessary to assess ultrasound of this subgroup. The other studies also illustrated that unhealthy state of mind, perinatal death rate and enhanced chances of sterility are due to invalid surgeries [11, 12]. Computed tomography (CT) Scan, USG, laparoscopy, computer aided programs and various scoring system were established for better identification. The most authentic technique is among all these tools is USG. In 1986 10 decades after first writing an acute appendicitis, USG became famous for identification of acute appendicitis [13, 14]. The percentage of specificity and sensitivity is reported in this study 100% and 89% respectively in acute appendicitis identification. Other studies produced the same results [15, 16, 17, 18, 19, 20]. The values of specificity, sensitivity, NPV and PV were 95%, 75 – 89%, 23 % and 93% respectively which is similar as reported in our study. Ultrasound offers much benefits. It doesn't offer the need of any instruments

is fast and reliable [21, 22, 23, 24].

A similar study was held in Qasur, Pakistan. In this study total 44 patients were included. These patients were suffering with same gynaecological disorders and acute abdominal discomfort. Due to unavailability of sufficient diagnostic potential, wrong detection was made. The rate of death in pelvis inflammatory disease (PID) and ectopic pregnancy was 5.55% and 16.66% respectively. After operation the commonly found complexities were retarded recovery and infection of women. Due to absence of suitable tools for detection in emergency situation, unchecked gynaecological issues and similar clinical aspects, surgeries are misguided [25]. In Lahore another study was organized which mentioned 105 females. The study was organized at Sheikh Zayed Hospital in Lahore. The age limit for these female patients was from 15 – 45. These were suffering with RIF discomfort. The results of this study were similar to our study. The advantages of color Doppler were also mentioned in one such study. When break down or burrowing occur, signals of Doppler depart [26].

Another illustrative study was organized. In this study patients were divided into two groups. Patients of both groups were admitted to two different hospitals in two different countries. Patients were suffering with acute appendicitis. Unfavorable results of both groups compared [27]. The study was conducted in Pakistan and Saudi Arabia. In Pakistan the hospital selected for this study was Ayyub Teaching Hospital where as Najran General Hospital Najran was the Hospital selected train Saudi Arabia. Both groups included 200 patients each. The patients in Pakistan hospital were not treated with USG before operation. While USG was performed in patients in Saudi Arabia before operation. For better

results routine ultrasound is done added in treatment and clinical evaluation with our study.

In the detection of acute appendicitis in non-gravid. Its specificity and reactivity have been noticed more than 90% [28]. The results of another such study showed that value of USG may remain uncertain in eliminating the negative appendectomies. It is due to the fact that USG has remarkable sensitivity (84.3% and 81.8 %) in detection before operation but its specificity is poor [29].

It is suggested in 2000 by the international commission on Radiological protection that disorder should be detection without employing the ionizing radiation in the situation if the incidence of the foetus done was high [30]. So, USG should be used for effective indication and for the prevention of invalid surgeries and incorrect indication.

CONCLUSION:

The study illustrated that in order to prevent invalid surgeries and incorrect detection USG should be performed. Its specificity and sensitivity noticed were 84% and 94% respectively.

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