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Subject :Research Methodology
Midterm Exam
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Semester 6th (Bs Radiology

Answer 1:

Five Steps for Conducting a Research.

1. Research phase: In this phase or step we will define the research problem or question and then we will review many literatures according the selected topic.

Good scientific research depends on gathering a lot of information before we even start collecting data. We'll need to investigate our subject-area to write a research question that our study can reasonably answer. Then, we'll need to develop in-depth knowledge about other studies to devise a plan for conducting our study.

Define Our Research Question:

The first step of our study is to formulate a research question. This is the question we want our study to answer. Research questions focus our experiment, help guide our decision-making process, and helps prevent side issues from distracting us from our goal.

Literature Review:

The second step of our study is to review the literatures.

A literature review is a very extensive background investigation into our research question. There are two primary goals of a literature review for a scientific study that involves statistical analysis.

First, we need to understand fully the subject-area that contains our research question. What have other studies found? Identify the significant relationships and effects that the literature recognizes along with their size and direction. What variables and factors play a role?

Secondly, we need information that helps us operationalize our study. Operationalization is the process of taking the general idea of our research question and creating an actionable plan that allows an experiment to answer the question. If our study includes statistical analysis, we'll need to determine how other studies have used statistics to answered similar questions.

2.Operationalize Our Study Plan:

In this phase or step we will define out variables and measurement techniques and will design the experimental methods.

Operationalizing a study is the process of taking our research question, using the background information we gathered, and a formulating an actionable plan. This plan includes everything from defining variables to how we'll analyze the data.

3.Data Collection:

At this point, we have operationalized our study and have a plan of action. After we make the necessary arrangements, we should be ready to collect data! Depending on the nature of our research, this can be quite a long process. Whether we are in the lab measuring, out administering surveys in the field, or working with human subjects, data collection is often the portion of the study that takes the most time and work.

4.Statistical Analysis:

Like the data collection stage of our study, we should already have the analysis phase defined.

We are analyzing the data correctly, satisfying the assumptions where necessary, and drawing the proper conclusions.

As the old saying goes, garbage in, garbage out. If we put garbage data into the statistical analysis, it'll spit out garbage results. If all the steps leading up to our analysis are not carefully thought out and performed, we might not be able to trust the results or miss important findings. Science is all about getting all the details correct.

5.Writing the Results:

After we collect the data and analyze it, we need to write up the results to inform other researchers about what we have found. Indicate which hypotheses the data support, the overall conclusions, and what they represent in the framework of the scientific field or real-world setting. However, it involves more than just writing up the findings.

Consequently, we'll need to provide enough information about how we conducted

our study so other researchers can repeat it and, hopefully, replicate the results.

ANSWER:2

Accuracy of ultrasonography in the diagnosis of acute calculus cholecystitis : Review of the literure

Abstract :

1: background: is to evaluate the accuracy of ultrasongraphy in the diagnosis of acute calculous cholecystasis as compared to other imaging modalities.

2: Methods: the authors performed for the original research and review publications for the search of medical line/pubd (national library of medicine, bethsida, Maryland) to examine the accuracy of ultrasonography. Search design used one or combination of the following terms: (1) acute cholecystitis, (2) ultrasonography, (3) computed tomography, (4) magnetic resonance cholangiopancreatography and (5) cholescintigraphy. This review was limited to human studies and English language literature. The four authors reviewed all the topics and then a summary of the 198 articles that looked appropriate. Other articles were recognized by reviewing the reference lists of important papers. Finally 31 papers complete text was reviewed.

3:Results: sonography is still used as an early imaging technique to detect Gallbladder stones, its real time role, and to review patients with suspected acute calculus cystitis due to its high sensitivity to its speed and porosity. Cholecentraphy is still suspected to be acute cholecystasis which is highest sensitivity and specificity in patients. However, due to a combination of reasons including logistic flaws, extensive imaging capability and clinical referral patterns, the use of cholescintigrapy is limited in clinical partice. CT is particularly useful for evaluating of many complications of acute calculus cholecystitis.

4: Conclusions: The us is currently considered a preferred early imaging technique for patients who are clinically suspected of acute calculus cholecystitis.

1: Background: Severe cholecystitis is described as severe inflammation Of the gallbladder wall, regardless of the cause. In many cases, the basic etiotology is obstruction Of cystic duct caused by any affected stone Gallbladder neck or cystic duct (severe calcu- Laos cholecystitis). Severe cholecystitis can also develop Unaccompanied cholelithiasis (severe acalculous) cholecystitis). It is very unusual for a patient to develop an acute cholecystitis without a history of biliary symptoms, such as back pain. In contrast, < 15% of patients with cholilithiasis experience clinical symptoms and < 5% have an acute cholecystitis . An estimated 25 million americans have cholelithiasis. In 80% of cases, cholelithiasis is mainly composed of cholesterol, accounting for pigments, calcium bilirubinate, and calcium carbonate for most of the rest.
Emergencies involving gallbladder and bile ducts are common radiological challenging pro blames. Imaging provides valuable information for the following reasons: (1) to ensure final diagnosis, as 20 percent of patients are clinically classified as acute cholecystitis is another disease that does not require surgery; (2) in case of delayed diagnosis to prevent the patient from complications and (3) to detect complications which may emphasize surgical treatment [1]. In this paper we evaluate the accuracy of ultrasono-graphy in the evaluation of acute calculator cholecystitis compared to other imaging methods by a literature search.

2: Methods: Writers demonstrated the search for madeline/pbomed (national library of medicine, bethesda, M³aryland) for original research and review publications that tested ultrasonography accuracy in the diag - nosis of acute calculus status compared to other imaging modillines. Search design used one or combination of the following terms: (1) acute cholecystitis, (2) ultrasonography, (3) cholescintigraphy, (4) computing tomography and (5) magnetic resonance cholangiopancreatography. This review was limited to human studies and English language literature. The four authors reviewed all the topics and then a summary of the 198 articles that looked appropriate. Other articles were recognized by reviewing the reference lists of important papers. Finally, complete text of 31 papers was reviewed.

3: Results:

Acute calculus cholecystasis: diagnosis with conventional radiography
Stonelike densities may be single or multiple. They can be irregular, show minor location or exhibit dense, uniform calculus. Gallbladder disease setting has a limited value of simple abdominal film as only 15-20% of gallstones are visible on stomach radiography and very little information can be obtained about gallbladder disease using traditional radiography.

Acute calculus cholecystitis: diagnosis with ultrasonography
ultrasound (us) is the preferred imaging test for diagnosis of acute cholecystitis and is the first method when clinical presentation is suggestive of biliary pathology. The main findings of acute calculus lass cholecystitis on us include pre-emptive addition of stones: gall bladder lumen tension, gall bladder wall thickness, a positive American morphological mark, pericholecystic fluid and a hyperemic wall upon evaluation with color Doppler.

Unfortunately, gal bladder wall thickness in the absence of cholecystitis can be seen in ba system conditions, such as liver, kidney and heart failure, possibly due to elevated portal and upper pressure of ba system [15]. Furthermore, as most patients are tested in the emer sex setting, it is sometimes questioned whether underage radiologists as well as experienced radiologists will perform, which are not always available at the time of exam Grantcharov et al. [16] prospic - tively we reviewed the interobserver fot gillbladder and biliary tract fi - examination formed by an experienced and a novice radiologist: They have reported that noice radiologist skills in pri - was as good as Mary diagnosis of uncomplicated gallstone disease as another gallbladder wall thickness and normal gall duct diameter measurement provided by the experienced collea can indicate the difference of significant interference in these parameters diagnosis is widely required extensive practice.

Acute calculus cholecystitis: according to the diagnosis with computed tomography
As previoulsy, gal bladder sonography or cho -lisintigraphy is usually formed per the first imaging study, as these methods have been shown both sensitive and specific to this condition. However, some patients have a complex or complex presentation with acute cholecystasis and a diagnostic may be suspicious. In these patients, possible diagnosis includes conditions of abscess, pancreatitis, ischemic bowel, or other abdom internal inflammatory Many of these patients may be sent for abdominal ct [18, 19]. Ct is particularly useful to review many complications of acute cholecystitis, such as emphysematous cholecys-titis, gagrenous cholecystitis, hemorrhage, and galstone ileus [20, 21]. In addition ct is also useful in making specific diagnosis when obesity or gas distance limits our use.

Acute calculator cholecystitis: diagnosis with magnetic resonance imaging

Both conventional magnetic resonance imaging (mri) and magnetic resonance cholangiopancreatogra -phy [23,24] have been diagnosed with acute calculator cholecystitis and its complications [25]. When compared to ultrasonography, some mri have found it equally [26] and some have found it superior [27]. Park and l. Please report in diagnosis of acute cholecystitis, we have improved in Mr Cholangiography in Gallbladder wall thickening is diagnosed. However, Mr Cholangiography is better than us in the diagnosis of cystic duct obstruction in the imaging of cystic duct and gallbladder neck calculi [28]. Widespread mri availability and relatively high cost reduction restrict its primary use [29-31].

4: Discussion :

Acute cholecystitis accounts is 3-10% for all patients with severe cholecystitis abdominal pain and is the most common cause of severe abdominal pain in the right upper quadratic, especially in elderly patients [25]. Sonography is still used as an early imaging technique to review suspected gallbladder (gb) disease patients by identifying gb stones, its real time role, and its speed and relevance [26] due to its greater sensitivity. Cholecentraphy is still suspected to be acute cholecystasis which is the highest sensitivity and speciality in patients (96% and 90%). However, due to a combi - nation of causes that limit the use of logistic disorders, extensive imaging capability and clinical reference pattern (especially in emergency setting) cholescinti graphic to clinical practice [9] and the U.S. has emerged as a first-line imaging module for dig-nosis of acute calculator cholecystitis. There is a lack of availability of equipment and/or personnel and the exam time lasts several hours, while the full American exam in the stomach is easily available, can be performed in 10-15 minutes, and allows for pain diagnosis. In addition, cholescintigraphy provides limited information to the hepatobiliary track, while we may be useful in diagnosing other pathological conditions responsible for stomach complaints. Cholecentgraphy also Carrie’s the burden of ionizing radiation whereas US and MR imaging do not (15).

4: Limitations :

There are several limitations for our study. Some related to this review include: accuracy, unusable text and time frame restrictions. In this review we do not use statistical techniques to combine the results of the elegy - bill studies. Another important limitation is the limited number of recent studies in which head-to-head work is performed by Pearson.

5:Conclusions :

We are currently considered to be the preferred early imaging technique for patients who are clinically suspected of acute calculus cystitis. The us is preferred by the majority of radiologists as there is more evidence regarding lower costs, availability of bet after hours, and its accuracy for cholecystitis. In the present exercise, I Emergency setting, ct is being used rapidly in elderly patients with espe-cially abdominal pain even when it is suspected of having severe Emergency setting, ct is being used rapidly in elderly patients with espe-cially abdominal pain even when it is suspected of having severe cholecystitis.

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