ROLE OF COMPUTED TOMOGRAPHY IN ACUTE PANCREATITIS AND ITS COMPLICATIONS AMONG AGE GROUPS

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SOURCE

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ABSTRACT

Acute pancreatitis is the inflammation of the pancreatic parenchyma. It can vary from mild to severe form with many simple to dangerous complications. Clinically patient presents with severe abdominal pain in the epigastric region. Vomiting, fever may be present. However it may present with various other types in complicated cases. Ultrsound is not very much useful as the gland visualization is poor and not in its complete entirety, due to its position and bowel gas shadows. CT is the investigation of choice, which shows enlarged hypodense pancreatic parenchyma. Fluid collection in the lesser sac and rertoperitoneum may be seen. The occurrence of the disease is less common in children; more in alcoholics and fatty females.

INTRODUCTION

This review critically discusses about the article **Role of Computed Tomography in Acute Pancreatitis and its Complications among Age Groups**',JPMA **200;** Vol. 55, No. 10, October 2005, 431,. Herein the simple methodology is followed to evaluated the effectiveness of the study. We analysed the abstract of the study. Then we followed the various literature put forward for the study. Slowly moving on, we summarize the article in total. Then the pattern is analysed for the structure of article. Various comments are written for the sections of article reflecting the credibility of the article.

REVIEW OF LITERATURE

Acute pancreatitis is a sudden inflammation that occurs over a short period of time. In the majority of cases, acute pancreatitis is caused by gallstones or heavy alcohol use. Other causes include medications, infections, trauma, metabolic disorders, and surgery. In up to 30% of people with acute pancreatitis, the cause is unknown.

The severity of acute pancreatitis may range from mild abdominal discomfort to a severe, life-threatening illness. However, the majority of people with acute pancreatitis recover completely after receiving the appropriate treatment.

In very severe cases, acute pancreatitis can result in bleeding into the gland, serious tissue damage, infection, and cyst formation. Severe pancreatitis can also create conditions which can harm other vital organs such as the heart, lungs, and kidneys.

Contrast-enhanced computed tomography (CECT) is the standard imaging modality for the evaluation of acute pancreatitis and its complications. Using non–contrast-enhanced CT, clinicians can establish the diagnosis and demonstrate fluid collections but cannot evaluate for pancreatic necrosis or vascular complications.

CECT allows complete visualization of the pancreas and retroperitoneum, even in the setting of ileus or overlying bandages from a recent surgical procedure. CECT can help detect almost all major abdominal complications of acute pancreatitis, such as fluid collections, pseudocysts, abscesses, venous thrombosis, and pseudoaneurysms. In addition, CECT can be used to guide percutaneous/interventional procedures such as diagnostic fine-needle aspiration or catheter placement. CECT may be performed on severely ill patients including intubated patients. Lastly, CECT can be used as a prognostic indicator of the severity of acute pancreatitis.

ARTICLE SUMMARY

This is a study conducted in 40 patients over a period of one year. It evaluates the role of CT scan in acute pancreatitis and its effectiveness in various age groups. Same CT scan machine and procedure was used. The severity of the acute pancreatitis can be evaluated by CT severity index. The CTSI in acute pancreatitis devised by Balthazar et al was used in this study.

ARTICLE STRUCTURE

Looking into the format of the article is very important. It shows us the approach of the author to present his study. In this article, the emphasis had been put forward much from the beginning by keeping the abstract very strong and clear. Abstract includes the study design and its objective. Then in body part, the article began with introducing the very brief concept of acute pancreatitis. It says Acute pancreatitis is a protean disease with a broad clinical spectrum of findings varying from mild to severe. Then it presents the patient and methods.

Various subheadings are included which covers the minor details of the study. For example the CT technique used was briefly mentioned. Amount of contrast used, CT severity index was described in detail. It was developed by Balthazaar et al. It is a prognostic indicator of morbidity and mortality in cases of acute pancreatitis. The study is a research study conducted by author; hence it does have some conventional information in each section. It also mentioned a brief role

of MRI in such cases. Results had been put in tabular form. Images were used at appropriate places. Finally discussions and conclusions were made from the study. Discussion was made in a comprehensive manner and very correct to it; however conclusion seems to be too short. No new conclusion was made. References were cited in-text and set out clearly in the literature cited section

ARTICLE CRITIQUE

Authority:

The journal JPMA is monthly medical journal, published in Karachi. This journal contains all the data and activities done genuinely by the various research teams including the colleges and students work. The editor will take into account all the necessary precautions to verify the article before publishing in leading journal. So the credibility of the article is more and justified as it is linked to the country's major journal. The author is highly educated and well qualified person. He had done other research work and his articles were used in other references

Accuracy:

The article is very much accurate in describing all its findings in correct way. The data shown also matches with similar study conducted elsewhere. The study done in a formulated way which also brings the article to be more accurate. The images shown in the article are direct evidence of the accuracy of the diagnosis

Current :

The study was done in Aug 2001 to August 2002. The journal was published in October 2005, while the article was accepted for publication in December 2004. The research it describes was current and the article cites up-to-date references in the body of the text (ranging from 1990-2001). Therefore the article is current.

Relevance:

The article was written and compiled by the well qualified doctors who made their sincere attempts to highlight the role of CT in pancreatitis. Besides, it also mentioned some good references and tables. Their study and data are very much useful for medical students and academician for their research purpose.

Objectivity:

The information was objectively developed, well supported with a current research base and with all evidence acknowledged and referenced. There was comprehensive evaluation of the role of the CT scan in the acute pancreatitis in various age groups There was no evidence of bias. The article acknowledged the complexity of the issues discussed in a number of ways. For example, the literature review provided CT assessment in various age groups; considering the severity of the disease more so in the adult population – a sample of 40 patients including 33 males and 7 women were included. The patients were divided into three age groups. First group was less than 40 years (12 patients), second was 40-60 years (17 patients) and last group was more than 60 years (11 patients).

Stability:

The article, with its source an academic journal on an academic data base is stable as a resource

ANALYSIS OF GRAPH/IMAGE/TABLE

The study had put various tables and images at appropriate places. For example CT severity index table showing the grading and degree of necrosis points ,table showing correlation between of CTSI with Age, Hospital stay, and Complications, Table showing Correlation of Age with Degree of Necrosis, images showing the complications of pancreatitis (Psuedocyst formation).However the number of images displayed is relatively less; without causing significant change in the research process. The graph was also not included in the study. Presence of the graph enhances the presentation which is lacking in this study

RECENT ADVANCES RELATED TO THE TOPIC

With relative easy availability of the **multislice CT scan**, it is slowly replacing the convetional CT machines, esp. in the metropolitan cities. Multislice CT scan including 16 slice to 128 slice can very well and effectively pick up any complications of acute pancreatitis like vascular complication. CT angiogram and venogram is possible due to this. Hence the advancement of technology has helped in identification of the complications in its early stage

MRI can be used in patients having implants and in those cases where contrast CT scan in contraindicated. For example in case of renal failure. No radiation hazards, hence can be useful in pregnancy also. Fast sequences are used for imaging the pancreatic vascular imaging.

MRCP is novel approach for the diagnosis of the obstructing calculi in the pancreatic duct. It uses heavily T2 weighted imaging

ERCP is helpful for diagnosis as well as for removing the stones from the main pancreatic duct. The use of nuclear **scintigraphy** is not routinely recommended in the diagnosis of the acute

panreatitis; however it is an effective investigation to rule of malignancy. Hence in cases of doubt, it is used for the purpose

CONCLUSION

This review has both summarized and critically reviewed article '**Role of Computed Tomography in Acute Pancreatitis and its Complications among Age Groups**'. The conclusion was made short and justified to the study. This article does not go deep into the other aspects of the study, focussing only on the aim.

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