

C-reactive protein to predict the need for surgical intervention in acute renal colic

McSorley ST et al. *Journal of Clinical Urology* 2014; 7(6):380-383.

Objectives

C-reactive protein (CRP) is a serum marker of systemic inflammation which has been suggested to predict need for emergent surgical intervention in patients with acute renal colic at a value of > 28 mg/l on admission. We aimed to determine if this applied to our patients.

Patients and methods

We prospectively collected data from all patients admitted with symptomatic urolithiasis, confirmed by CT-KUB, over three months. Fifty-nine patients were included; however, four were excluded because of comorbidities which could influence CRP, or recent urological surgery, giving N = 55, age 50.0±14.6 years (mean±SD), M:F 40:15. The decision to proceed to intervention was made by each patient's clinical team and not by the authors; however, there was no blinding to CRP.

Results

A total of 24 of 55 patients required intervention on their index admission (22 retrograde ureteric stent, one nephrostomy, one ureteroscopic stone extraction), and 31 were managed conservatively. Those undergoing intervention had higher CRP on admission (mean 16.3 vs 9.4 mg/l, $p = 0.06$) and higher maximum CRP (mean 94.7 vs 25.7 mg/l, $p < 0.001$) than those managed conservatively. Nineteen (79%) of those requiring intervention had CRP < 28 mg/l on admission. There were no deaths, no intensive care admissions and all were discharged to outpatient follow-up.

Conclusion

Rising CRP during admission is a strong predictor of the need for emergency surgical intervention in patients with acute renal colic; however, CRP at admission is less useful.

Commentary

Ajith Malalasekera

Consultant urological surgeon and senior lecturer in anatomy

Faculty of Medicine, University of Colombo

This study reinforces the importance of assessing for the presence of sepsis in patients with renal colic. Apart from clinical evidence of infection, CRP, especially rising CRP will, according to this study, add to the information that will identify those requiring intervention. While this marker rises in response to inflammation in the patient, it is not specific to the site nor a particular cause. Clinicians must be aware of factors which may raise the CRP (e.g. inflammation, trauma, infection) when utilising this information in the management of renal colic patients.

Use of drains versus no drains after burr-hole evacuation of chronic subdural haematoma: a randomised controlled trial.

Santarius T et al. *Lancet* 2009 Sep 26;374(9695):1067-73.

Background

Chronic subdural haematoma causes serious morbidity and mortality. It recurs after surgical evacuation in 5-30% of patients. Drains might reduce recurrence but are not used routinely. Our aim was to investigate the effect of drains on recurrence rates and clinical outcomes.

Methods

We did a randomised controlled trial at one UK centre between November, 2004, and November, 2007. 269 patients aged 18 years and older with a chronic subdural haematoma for burr-hole drainage were assessed for eligibility. 108 were randomly assigned by block randomisation to receive a drain inserted into the subdural space and 107 to no drain after evacuation. The primary endpoint was recurrence needing redrainage. The trial was stopped early because of a significant

benefit in reduction of recurrence. Analyses were done on an intention-to-treat basis. This study is registered with the International Standard Randomised Controlled Trial Register (ISRCTN 97314294).

Findings

Recurrence occurred in ten of 108 (9.3%) people with a drain, and 26 of 107 (24%) without ($p=0.003$; 95% CI 0.14-0.70). At 6 months mortality was nine of 105 (8.6%) and 19 of 105 (18.1%), respectively ($p=0.042$; 95% CI 0.1-0.99). Medical and surgical complications were much the same between the study groups.

Interpretation

Use of a drain after burr-hole drainage of chronic subdural haematomas is safe and associated with reduced recurrence and mortality at 6 months

Commentary

Ruvini Abeygunaratne
Consultant Neurosurgeon
Hope hospital, Manchester and Lanka hospitals,
Colombo

This is a landmark paper in neurosurgery dealing with a common but important condition with a high mortality and morbidity. Chronic subdural haematomas are common and generally affect the elderly population who suffer from a number of pre-existing pathologies. Therefore there are risks associated with recurrent surgery, and thereby morbidity and mortality increases. The most effective treatment is that which involves one surgical procedure which is quick and safely done with measures taken to reduce the incidence of recurrence. This randomised trial demonstrates that the use of subdural drains routinely reduces the rate of recurrence and the 6 month mortality.

Extent of colorectal peritoneal carcinomatosis: Attempt to define a threshold above which HIPEC does not offer survival benefit: a comparative study

Goéré D et al. *Annals of Surgical Oncology* 2015; (Online First) 1-7

Background

The main prognostic factors after complete

cytoreductive surgery (CCRS) of colorectal peritoneal carcinomatosis (PC) followed by intraperitoneal chemotherapy (IPC) are completeness of the resection and extent of the disease. This study aimed to determine a threshold value above which CCRS plus IPC may not offer survival benefit compared with systemic chemotherapy.

Methods

Between March 2000 and May 2010, 180 patients underwent surgery for PC from colorectal cancer with intended performance of CCRS plus IPC.

Results

Among the 180 patients, CCRS plus IPC could be performed for 139 patients (curative group, 77%), whereas it could not be performed for 41 patients (palliative group, 23%). The two groups were comparable in terms of age, gender, primary tumor characteristics, and pre and postoperative systemic chemotherapy. The mean peritoneal cancer index (PCI) was lower in the curative group (11 ± 7) than in the palliative group (23 ± 7) ($p < 0.0001$). After a median follow-up period of 60 months (range 47–74 months), the 3-year overall survival (OS) rate was 52 % [95% confidence interval (CI) 43–61%] in the curative group compared with 7% (95% CI 2–25%) in the palliative group. Comparison of the survivals for each PCI (ranging from 5 to 36) shows that OS did not differ significantly between the two groups of patients when the PCI was higher than 17 (hazard ratio 0.64; range 0.38–1.09).

Conclusion

This study confirmed the major prognostic impact of PC extent. When the PCI exceeds 17 in PC of colorectal origin, CCRS plus IPC does not seem to offer any survival benefit.

Commentary

Dulantha de Silva
Senior Lecturer in Surgery
General Sir John Kotelawala Defence University

Presence of peritoneal metastases in colorectal cancer has been generally associated with dismal prognosis, conferring a virtual death sentence on the sufferer. In the

last two decades however, the introduction of Cytoreductive Surgery (CRS) combined with hyperthermic intra-peritoneal chemotherapy (HIPEC) has given rise to 5-year survival rates of up to 30-50% in select groups of patients.

This prospective study from a centre with significant experience in this technique is an attempt to further define the group of patients with potential to benefit from this treatment strategy. Two major factors affecting outcome in these patients are the completeness of cytoreduction i.e. removal of all macroscopic tumour nodules greater than 1mm and the extent of peritoneal metastases as defined by the peritoneal carcinomatosis index (PCI score).

Evidence has long indicated that inability to achieve complete cytoreduction is associated with poor prognosis with survival no better than with palliative chemotherapy. The data from this study supports that contention. The study also shows an impressive overall 3-year survival rate of 52% for complete CRS and HIPEC. However sub-group analysis does indicate that with PCI scores greater than 17, it confers no survival advantage even in the presence of complete cytoreduction. The data from this study adds to the evidence that in patients with relatively limited peritoneal disease, CCRS and HIPEC can be associated with significant survival benefits.

The place of this technique is still controversial among some authorities, perhaps due to the paucity of good quality randomised control trials evaluating its efficacy. Nevertheless, it is hard to ignore the potential promise of this procedure in offering a chance of survival in a number of patients otherwise condemned to palliation.

Outcome of hemiarthroplasty and total hip replacement for active elderly patients with displaced femoral neck fractures: A meta-analysis of 8 randomized clinical trials

Yiqiong Zhao, A Meta-Analysis of 8 Randomized Clinical Trials. *PLoS ONE* 9(5):e98071.

Background

Displaced fracture of the femoral neck has been a common clinical problem, especially in aged patients. However, the optimal treatment choice remains

controversial. The purpose of this study is to conduct a systematic review of randomized clinical trials assessing the results of hemiarthroplasty and total hip replacement in patients undergoing either alternative using meta-analysis.

Methods

A literature search for randomized clinical trials was conducted through Medline, Embase and Cochrane library between 1969 and 2013 with no restrictions. Additional relevant articles were referred as source of information by way of manual searches on major orthopedic journals. Upon the search, two authors independently evaluated study quality and relevant data was extracted.

Results

A total of 8 studies with 983 patients were included in this meta-analysis. After pooling the available data, a significant dominance of Harris hip score was found for total hip replacement compared with hemiarthroplasty (SMD:27.11, 95%:210.70,23.53) one year postoperatively and the advantage kept over (SMD: 26.91, 95%:212.98, 20.85) two years after surgery. A trend toward a higher dislocation rate was found in total hip replacement group (RR: 0.46, 95%: 0.21,1.02), of which the difference was considered insignificant. The risk of revision in group hemiarthroplasty appeared to be more than two fold higher than that after total hip replacement (RR: 4.14, 95%CI: 2.09, 8.19).

Conclusion

Even though there is a higher rate of dislocation after total hip replacement, this disadvantage could be accounted for, on the basis of a better functional score and the lower revision rate. However, from the results, it stands to reason that total hip replacement should be strongly suggested in elderly active patients with femoral neck fracture.

Commentary

Hiran Amarasekera
Consultant Orthopaedic Surgeon
Neville Fernando Teaching Hospital
Malabe

The treatment of choice for sub capital femoral neck fractures in last decades has been hemi arthroplasty.

Either cementless (Austin-Moore) or cemented (Thompson) type prosthesis has been widely used. However with increasing life expectancy and increased active lifestyle in the elderly total hip replacement (THR) has been preferred as the first line of treatment by some orthopaedic surgeons. Where is the evidence helping orthopaedic surgeons to make that decision? Zhao et al has combined eight randomized control trials in this meta-analysis to answer this question. Eight randomised trials done in Germany, Italy, Sweden, Holland, UK and USA with a total of 983 patients were included in the meta-analysis.

Authors conclude that apart from a slightly higher dislocation rate the benefits of a total hip replacement in the active elderly outweigh the risks and suggest this as the treatment of choice. As all these studies have been done in developed countries the information should be cautiously applied in a developing country such as Sri Lanka. Points to consider in our setting are the cost difference between the two implants, time taken for the surgery, expertise level available in the health service, workload of the surgeon, age and activity level of the patient. Cost difference between the two implants is significant, a THR costing 10 to 15 times that of a hemiarthroplasty. Skill level needed for hemiarthroplasty is less than for a THR enabling junior surgeons such as SHOs and trainees to do them. Time taken for a hemiarthroplasty is far less than for a THR a key factor in a setting with a high workload and limited theatre time. The activity level and demand for independent mobility of Sri Lankans may be less than that of the European patients.

Nevertheless the times are changing with increasing life expectancy, and increasing number of elderly living alone, leading to increased demand for THR over the years.

However if we were to adopt THR as primary treatment for femoral neck fractures our own criteria should be developed considering above factors to suite the Sri Lankan setting.

Prior to developing these criteria it will be interesting to know the percentage of hemiarthroplasties that are revised for a THR and the indication for the revision. A research project to find this information is essential to move forward in the right direction

The Society for Vascular Surgery lower extremity threatened limb classification system based on wound, ischemia, and foot infection (WIFI) correlates with risk of major amputation and time to wound healing

Zhan, Luke X. et al. *Journal of Vascular Surgery*, Volume 61, Issue 4, 939 - 944

Objective

The purpose of this study was to evaluate whether the new Society for Vascular Surgery (SVS) Wound, Ischemia, and foot Infection (WIFI) classification system correlates with important clinical outcomes for limb salvage and wound healing.

Methods

A total of 201 consecutive patients with threatened limbs treated from 2010 to 2011 in an academic medical center were analyzed. These patients were stratified into clinical stages 1 to 4 on the basis of the SVS WIFI classification. The SVS objective performance goals of major amputation, 1-year amputation-free survival (AFS) rate, and wound healing time (WHT) according to WIFI clinical stages were compared.

Results

The mean age was 58 years (79% male, 93% with diabetes). Forty-two patients required major amputation (21%); 159 (78%) had limb salvage. The amputation group had a significantly higher prevalence of advanced stage 4 patients ($P < .001$), whereas the limb salvage group presented predominantly as stages 1 to 3. Patients in clinical stages 3 and 4 had a significantly higher incidence of amputation ($P < .001$), decreased AFS ($P < .001$), and delayed WHT ($P < .002$) compared with those in stages 1 and 2. Among patients presenting with stage 3, primarily as a result of wound and ischemia grades, revascularization resulted in accelerated WHT ($P = .008$).

Conclusions

These data support the underlying concept of the SVS WIFI, that an appropriate classification system correlates with important clinical outcomes for limb salvage and wound healing. As the clinical stage progresses, the risk of major amputation increases,

1-year AFS declines, and WHT is prolonged. We further demonstrated benefit of revascularization to improve WHT in selected patients, especially those in stage 3. Future efforts are warranted to incorporate the SVS WIfI classification into clinical decision-making algorithms in conjunction with a comorbidity index and anatomic classification.

Commentary

Dr. Nalaka Gunawansa
Consultant Vascular and Transplant Surgeon
National Institute for Nephrology Dialysis and Transplantation
National Hospital of Sri Lanka

Salvaging the infected diabetic foot and preventing major amputation is a tremendous challenge to all general and vascular surgeons worldwide. Deciding which patient can be safely salvaged without major amputation and which patient will benefit with a revascularization procedure to attempt such limb salvage has been an ongoing debate even amongst vascular surgeons. While not all diabetic foot ulcers

with infection warrant amputation, neither do all ischaemic diabetic feet benefit by revascularization, especially if the infection has destroyed the tissue beyond a point of potential salvage.

The Society of Vascular Surgery (SVS) has thus introduced a scoring system that incorporates the three main determinants of such limb salvage (wound extent, degree of limb ischaemia and degree of foot infection) to shed some light and guidelines in this area of controversy. This study was the first major study that adopted the said scoring system in clinical practice to assess its applicability across a wide spectrum of patients suffering from different degrees of ischemic diabetic foot ulcers.

Although the sample size was relatively small to be used as a benchmark for future revascularization attempts, the study has shown the clinical applicability and use of such a scoring system to predict limb salvage and amputation free survival rates. This will invariably assist in the decision making process of clinicians before embarking on revascularization or condemning for major amputation.