Poster Corner 4: Outcomes and Quality Improvement

045 - SHORT VERSUS LONG AXIS ULTRASOUND GUIDED APPROACH FOR INTERNAL JUGULAR VEIN CANNULATIONS: A PROSPECTIVE RANDOMISED CONTROLLED TRIAL.

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INTRODUCTION. The guidelines for the use of bedside ultrasonography in evaluation of critically ill patients published by the society of critical care medicine recommends short axis view be used during insertion of central venous catheter in internal jugular vein to improve success rate.
OBJECTIVE. We hypothesise that if two persons perform long axis cannulation i.e. one person will image the vein while the other punctures, it will be equally convenient to single person doing the cannulations in short axis with the advantage of lesser complications and lesser risk of posterior wall puncture in long axis.
METHODS. Any patient getting admitted to ICU and requiring central venous cannulation was included in the study. Patients with body mass index >30 were excluded. The eligible patients were randomized into a short axis single operator or long axis double operator technique for ultrasound guided IJV cannulations. The primary outcome measure was time from skin puncture to insertion of guidewire and the secondary outcome measures were the total procedure time, number of needle sticks and complications (hematoma, posterior wall puncture, arterial puncture, extravasations and pneumothorax).Statistical analysis was performed using SPSS 20 software. Insertion time, overall procedure time and number of needle sticks were analysed using Mann-Whittney U tests and success rate and complications compared using Fischer exact tests.
RESULTS. Total 69 patients were studied, 36 patients in the short axis group had a median age 55 years(IQR:42.75-68.50), M:F 22:14 and 33 patients in long axis group had a median age 60 years(IQR:52-72.50), M:F 20:13.In the short axis technique, the puncture to guidewire time was 36 seconds(IQR:28-79.25) and scan to suturing time 337.50 seconds(IQR:248.25-453.75).In the long axis group, the puncture to guidewire time was 65 seconds(IQR:32.94-80) and scan to suturing time 335 seconds(IQR:283-435).There was no significant difference in the two techniques with regard to the number of needle sticks or complications. One case in short axis was converted to long axis due to hematoma or posterior wall puncture and one due to multiple needle pricks.
CONCLUSION. Long axis double operator technique is as good as short axis single operator technique for ultrasound guided internal jugular vein cannulation with no increased risk of complications or total procedure time.
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046 - MORTALITY ASSOCIATED TO SEPSIS: NORTHERN ITALY, 2008 TO 2016

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INTRODUCTION. Few population-based data are available on mortality due to sepsis. Standard mortality statistics are based on the underlying cause of death (UCOD), identified from all the diseases reported in the death certificate according to internationally coding rules. Another approach is to analyze any mention of a disease in the certificate (multiple causes of death - MCOD).
OBJECTIVES. The aim of the study was to estimate sepsis-related mortality by analyses of MCOD.
METHODS. From mortality records of the Veneto Region (northeastern Italy, about 4,900,000 inhabitants), all deaths with sepsis mentioned anywhere in the death certificate were retrieved for the period 2008-2016. Proportional mortality (share of all registered deaths), crude and age-standardized mortality rates were computed for sepsis selected as the UCOD, and for sepsis mentioned anywhere in the certificate. The probability of mention of selected comorbidities was compared between deaths with and without sepsis by means of age-gender-adjusted prevalence ratios (PR) with 95% confidence intervals (CI) estimated through log-binomial regression.
RESULTS. Overall 29,158 sepsis-related deaths were tracked. Sepsis was mentioned in 7.1% of all

regional deaths, increasing from 4.9% in 2008 to 9.3% in 2016. Sepsis was the UCOD in 0.6% of total deaths in 2008, and in 2.1% in 2016. Crude mortality rates increased from 5.5 to 20.1 per 100,000 population for sepsis as the UCOD (+264%), and from 45.0 to 90.2 for sepsis as MCOD (+100%). The corresponding increase in age-standardized rates was +198% and +67%, respectively. The mention of sepsis in death certificates was significantly increased in the presence of selected chronic conditions: diabetes (PR 1.15, CI 1.12-1.19), dementia/Alzheimer (PR=1.20, CI 1.16-1.24), Parkinson's disease (PR=1.19, CI 1.10-1.27), chronic renal failure (PR=1.56, CI 1.50-1.62), rheumatoid arthritis (PR=1.87, CI 1.66-2.11), hematological malignancies (PR=2.01, CI 1.94-2.09).
CONCLUSIONS. MCOD analyses provide a more complete estimate of the burden of sepsis-related mortality. MCOD data suggest an increasing importance attributed to sepsis by certifying physicians, but also a real increase in mortality rates, possibly reflecting a changing population affected by multiple comorbidities and more susceptible to sepsis.
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047 - COMPARISON OF REAL TIME ULTRASOUND GUIDANCE VERSUS PALPATION TECHNIQUE IN RADIAL ARTERY CATHETERIZATION IN CRITICALLY ILL PATIENTS WITH HYPOTENSION: A RANDOMIZED CONTROLLED TRIAL

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INTRODUCTION. Ultrasound (USG) guidance can improve the success rate of vascular cannulation. There is lack of data regarding the utility of USG guided arterial cannulation in critically ill patients in hypotensive shock.We aim to compare the success rates and cannulation times of two techniques of arterial catheterization (real time USG guidance versus palpation) in critically ill patients in hypotension.
OBJECTIVES. : To compare USG-guidance with palpation technique in radial artery catheterization in terms of first-pass success rate among critically ill patients presenting with hypotension. Secondary objectives were to compare the final success rate, total number of attempts needed for catheterization, time for successful catheterization (cannulation time) and early complications rate in two groups.
METHODS. : After obtaining approval from Institutional ethics committee, single center, prospective, randomized trial was performed among 100 critically ill patients aged >18 years, with hypotension (or requiring vasopressor infusion). Patients were randomized at a ratio of 1:1 to the ultrasound group or palpation group. Under aseptic precautions, arterial puncture was performed using appropriate sized Leader Cath (Vygon, Ecquen, France),under real time USG guidance using short-axis out-of-plane view with bevel down. Data were recorded and compared between two groups.The unpaired Student's t-test or Mann-Whitney U test were used for continuous variables, and the uncorrected Chi-squared or Fisher's exact test were used for proportions. Statistical analyses were performed using the SPSS statistical software program (version 21.0.2, SPSS, Chicago, Illinois).
RESULTS. A total of 100 patients with hypotensive shock requiring radial artery catheterization were randomized into palpation (n = 51) and ultrasound (n = 49) groups. One patient in ultrasound group was excluded from final analysis due to protocol violation.First pass success rate was significantly higher in ultrasound group as compared to palpation group (83% vs 41%, $p< 0.0001$). Cannulation time was significantly shorter in ultrasound group (72.9 vs 88.7,$p< 0.05$). Early complications were significantly lower in ultrasound group compared to palpation group (5.2% vs 14.6% , $p< 0.001$).
CONCLUSIONS. In critically ill patients with hypotension (or requiring vasopressors), ultrasound guidance improved first pass success rate, shortened cannulation time and reduced rate of early complications.

048 - THE IMPACT OF INNOVATIVE EARLY WARNING INFORMATION SYSTEM ON REDUCING IN-HOSPITAL CARDIAC ARREST: 5-YEAR EXPERIENCE

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BACKGROUND. For in-hospital cardiac arrest (IHCA) patients, the early warning system is crucial to detect this critical condition in advance. However, there were limited publications to apply early warning information system on reducing IHCA. The aim of this study is to investigate the impact of early warning information system on reducing IHCA.
METHODS. Total 247,426 consecutive adult patients admitted to a tertiary medical center between January 2013 and September 2017 were enrolled in this study. In total, 1,599,921 patient-day was collected, including 738,027 internal medical patient-day. Since 2015, an electronic national early warning score information system was established. Furthermore, according to ROC curve, early warning score ≥ 7 or more than highest scores among previous 3 measurements were identified as quality index to detect critical patients. The physicians could manage critical patients early once computer-based reminding alarm noted. All patients were divided into 5 different years.
RESULTS. The rate of IHCA reduced from 2.5‰ in 2013, 2.4‰ in 2014, 2.1‰ in 2015 and gradually improved to 1.7‰ in 2016 and 1.8‰ in 2017 ($p < 0.05$). The incidence of IHCA reduced from 0.37‰ in 2013, 0.36‰ in 2014, 0.32‰ in 2015 and gradually improved to 0.26‰ in 2016 and 0.28‰ in 2017 ($p < 0.05$). The rate of IHCA in internal medical patients reduced from 4.8‰ in 2013, 4.9‰ in 2014, 4.6‰ in 2015 and gradually improved to 3.4‰ in 2016 and 3.7‰ in 2017 ($p < 0.05$). The incidence of IHCA in internal medical patients reduced from 0.62‰ in 2013, 0.65‰ in 2014, 0.60‰ in 2015 and gradually improved to 0.43‰ in 2016 and 0.49‰ in 2017 ($p < 0.05$).
CONCLUSION. This 5-year study showed that innovative early warning information system could reduce the rate and incidence of IHCA, especially internal medical patients.

049 - WHAT IS THE COST OF INTENSIVE CARE IN AUSTRALIA?

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INTRODUCTION. Intensive care is expensive. Little is known of the cost of intensive care to a health system. The purpose of this study was to describe the costs of intensive care in Australia.
METHODOLOGY. The Australian and New Zealand Intensive Care Society (ANZICS) conducts an annual survey of ICUs. The 2013/2014 survey to 181 Australian units, included questions on cost, based on the cost block methodology.
Units were classed as tertiary, metropolitan, regional or private.
RESULTS. 144 (80%) units completed a survey. 79 units (44%) provided cost information which represented 48% of all beds.
Staff costs were 82% of the total cost.
Medical costs were 26% and nursing costs 53% of total cost (40 units)
63% of units included medical costs and 92% included nursing costs in their budget.
The 37% of units who reported that medical costs or nursing costs are not included in their budget, were excluded from subsequent calculations.
The median cost per patient day was $4,190 (IQR $3279 - $5166) for 36 units.
The cost per patient day was similar for different classifications of unit and trended to less cost with larger unit size. The variation in cost between units is not explained.
Median cost per bed was $1,104,500. There was no association between cost and occupancy. Total cost for the 36 units was $548,110,000 representing 25% of all 2027 beds.
Extrapolation by classification of unit gives a national annual cost of $2,262,857,000.
This represents 1.45% of all health expenditure. Public hospital ICUs spent 1.5% of all government health spending and 3.4% of government public hospital health spending.
DISCUSSION. Top down cost methodology is difficult to use in a voluntary survey. Units mostly report information available in their unit budget. Care is needed to know what is included in a unit's budget when using the total budget cost.
Staff costs are the largest contribution, with smaller and private units often having medical costs not

included, so that their total budget cost will underestimate true cost.
International comparisons are difficult as funding differs and budget models differ, particularly medical staffing models.
CONCLUSION. Cost studies are difficult. Australian intensive care costs $4,190 per patient day and is 1.45% of all health expenditure.

050 - THE EARLY MOBILIZATION OF PATIENTS WITH ACUTE MYOCARDIAL INFARCTION CAN BE ACHIEVED VIA INNOVATIVE OVER-HEAD LIFTING SYSTEM IN INTENSIVE CARE UNITS

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OBJECTIVES. Prolonged bed rest was found in most patients after acute myocardial infarction in intensive care units. However, prolonged bed rest was shown to reduced stroke volumes, oxygen peak uptake and cardiac deconditioning. The study is to invesitage application of innovative over-hear lifting system to improve the early mobilization of patients after acute myocardial infarction in intensive care units.
METHODS. The consecutative uncomplicated AMI patients was enrolled in this study. The patients were divided into 4 groups: pre-intervention period (n=337), interventional period (n=60), post-intervention period (N=214) and maintenance period (N=467).The early mobilization is defined as mobilization within 48 hours after admission. The key interventions include direct rehabilitation order by cardiologist, nursing staffs assisting early rehabilitation protocol, computerized rehabilitation recording system and establishment overhead lift system in intensive care unit (Likorall, Sweden).
RESULTS. The rate of early mobilization increased from 19.3% in pre-intervention period to 62.1% in post-intervention period and 63.4% in maintenance period ($p< 0.001$). The median time of mobilization improved from 3.01 days to 1.79 days in post-QCC period and 1.8 days in maintenance period ($p< 0.001$), and length of hospital stay also decreaed from 6.7 days to 4.9 days in post-QCC period and 4.9 days in maintenance period ($p< 0.001$). There was no difference of rate of ventricular tachycardia, rate of ventricular fibrillation, or in-hospital mortality among these 4 periods.
CONCLUSIONS. The innovative overhead liftting system in intensive care units can improve the rate of early mobilization, median time of mobilization and length of hospital stay without increasing legthal ventricular arrhythmia and in-hospital mortality in patients after acute myocardial infarction.

051 - CUMULATIVE SURVIVAL RATES COMPARISON BASED ON LIVER TRANSPLANT INDICATION OVER 20 YEARS EXPERIENCE IN SANTIAGO DE COMPOSTELA (SPAIN)

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INTRODUCTION. 809 Liver Transplants (LT) were made at Hospital Clínico Universitario de Santiago de Compostela (Spain) in the period 1994-2014, accounting 4.25% of all LT performed in Spain (19005 cases, according to the Spanish Liver Transplant Registry- RETH). Review and comparison of Cumulative Survival Rates based on LT Indication over 20 Years Experience.
MATERIALS AND METHODS. Retrospective and descriptive study of 809 cases of LT performed from 1994 to 2014 at Hospital Clínico Universitario de Santiago de Compostela (Spain) based in our local LT Registration.
RESULTS. 809 LT cases, 12 of which were Hepatorenal Transplantations, 35 required a Re-Transplantation. Media of LT: 36 LT/year. Gender: 79.35% Male, 20.64% Female, Mean Age of 51 years old. Blood Group: A positive (49%) and 0 positive (39%). Most frequent LT Indication Groups: Liver Cirrhosis (LC): 541 cases, Tumors (T): 186 cases, Fulminant Liver Failure (FLF): 50 cases and

Re- Transplant (RLT): 35 cases. In the LC Group the most frequent: Alcohol-Related (ARC): 64%, Hepatitis Virus C Cirrhosis (HVC): 22%, Primary Biliary Cirrhosis (PBC): 5% with Cumulative Survival Rate at 20 Years: ARC: 50%, HCV: 35% and PBC: 48%. In T Group the most frequent indication: Hepatocarcinoma (HC): 90%, Neuroendocrine Tumor (NET): 4%, Klatskin Tumor (KT): 3% with Cumulative Survival Rate at 20 Years: HC: 59%, NET: 50% and KT: 30%. In FLF Group: Autoimmune/ Toxic/ Idiopatic (ATI): 72%, Hepatitis B Virus (HBV): 10% and Post- traumatic (PT): 6% with a Global Cumulative Survival Rate at 20 years: 70% in the total group. In RLT Group: Hepatic Artery Thrombosis (HAT): 35%, Primary Allograft Dysfunction (PAD): 29% and Recurrence of Underlying Disease (RUD): 21% with a Global Cumulative Survival Rate at 5 years (2008-2013): 23%.
CONCLUSIONS. Liver Chirrosis is the most frequent indication towards LT, followed by Tumors, with Hepatocarcinoma predominance and Fulminant Liver Failure. Cumulative Survival Rate globally is similar to the ones found out in other Transplantation Programs. In Liver Cirrhosis Group, Alcohol-Related Cirrhosis is the most frequent and with better Outcome as well as Hepatocarcinoma int the Tumor Group. Autoimmune/Toxic/Idiopatic is the most frequent in Fulminant Liver Failure Group and has the best Outcome of all LT Indications though, poor Outcome at Retransplant Group leads to a more careful selection of cases to get better Survival Ratios.

052 - BLEEDING AND THROMBOSIS IN CHINESE ADULTS ON EXTRACORPOREAL MEMBRANE OXYGENATION

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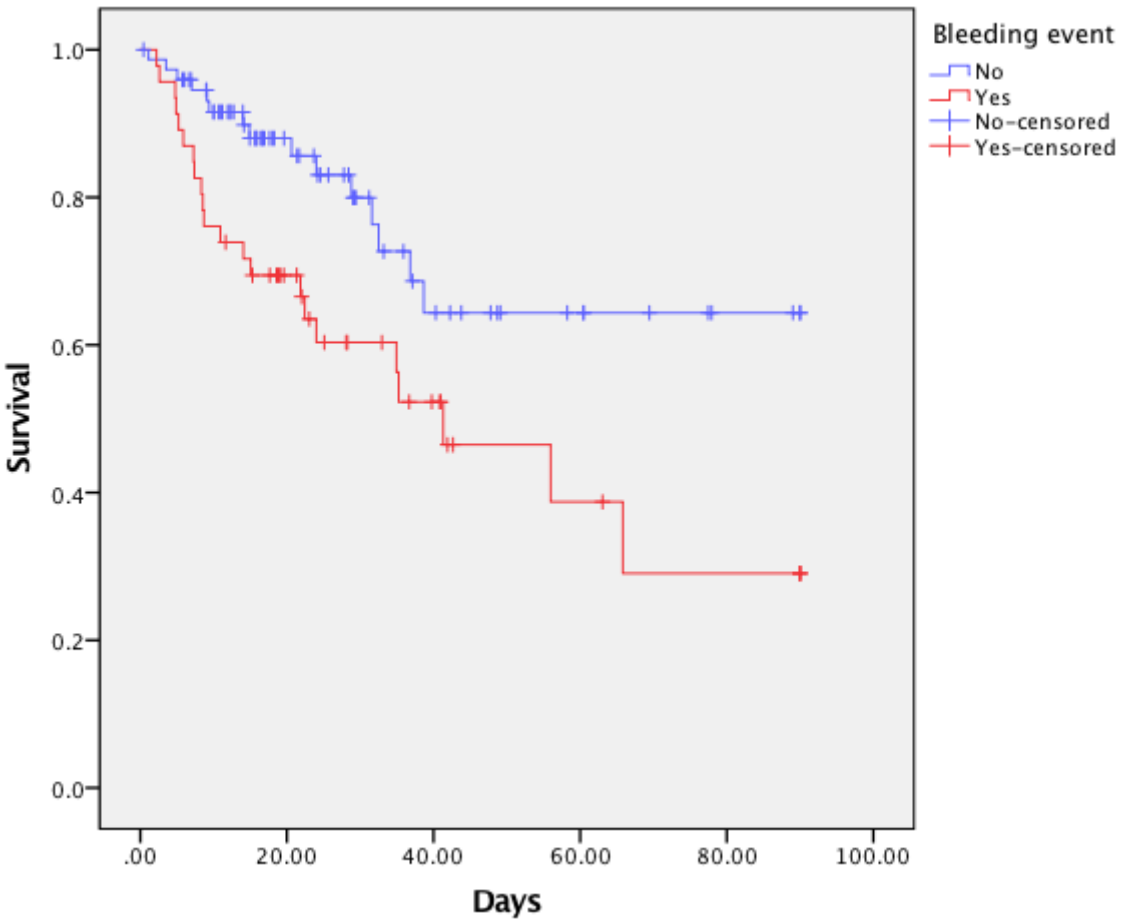
INTRODUCTION. Haemostatic complications remain the leading cause of morbidity and mortality in patients receiving extracorporeal membrane oxygenation (ECMO). Anticoagulation used to prevent circuit clots and thromboembolic complications increases the risk of bleeding. The characteristics of haemostatic complications in Chinese patients receiving ECMO have been poorly defined.
OBJECTIVES. To describe the bleeding and thrombosis in Chinese adult patients undergoing ECMO and to identify the risk factors for bleeding.
METHODS. We retrospectively reviewed the ECMO registry and patients´ medical records between October 2011 to August 2017. Chinese aged >= 18 years who received ECMO were included. Exclusion criteria were non-Chinese, haematological disorders, cannulation injuries and ECMO previously managed in other centres. Bleeding events were defined as clinically overt bleeding recorded in the medical and/ or nursing charts associated with a drop of haemoglobin greater than 2g/L over 24 hours or require intervention. Bleeding occurred before ECMO initiation was not counted as a bleeding event. Thrombotic events were defined as oxygenator dysfunction requiring replacement, reperfusion catheter clot, deep vein thrombosis, pulmonary embolism, embolic stroke, intracardiac thrombus or limb ischemia with embolism. Heparin dose was titrated according to activated clotting time. Logistic regression was used to investigate the risk factors for bleeding. Cox proportional hazard model stratified by the ECMO mode was used to study the association between bleeding and mortality.
RESULTS. A total of 152 ECMO episodes were screened and 121 episodes (76 venovenous) were included. Forty-six (38.0%) episodes were complicated by at least one bleeding event. The most common bleeding sources were ECMO cannula (24.7%), gastrointestinal tract (14.0%), intracranial (9.1%) and thoracic (9.1%). Lower fibrinogen [Adjusted odds ratio (OR) 2.33, 95% CI 1.52-3.57] and bacteraemia [Adjusted OR 3.73, 95% CI 1.36-10.26] were independently associated with greater risk of bleeding. The association between heparin dose and bleeding was not significant (p=0.707). Bleeding events [Adjusted hazard ratio (HR) 2.27, 95% CI 1.10-4.71], APACHE II score [adjusted HR 1.11, 95% CI 1.06-1.17] and the need for renal replacement therapy [adjusted HR 2.768, 95% CI 1.02-7.52] were independently associated with worse 90-day survival. Eighteen (14.8%) ECMO episodes had thrombotic events and 5 (4.1%) had oxygenator dysfunction requiring replacement.



[Kaplan-Meier analysis of 90-day mortality for patients receiving ECMO]

CONCLUSIONS. Bleeding was frequent in Chinese patients on ECMO and had a significant impact on mortality. We report a higher incidence of gastrointestinal bleed and intracranial haemorrhage in Chinese than has previously described in Caucasian. Lower fibrinogen and bacteraemia were associated with bleeding. Oxygenator thrombosis requiring replacement was uncommon. Prospective studies are needed to better evaluate bleeding and thrombosis in Chinese patients.<ol class="ol1">
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053 - APPLICATION OF 1.0% CHLORHEXIDINE GEL AND ITS EFFECT ON CATHETER ASSOCIATED URINARY TRACT INFECTION (CAUTI) IN A TERTIARY CARE HOSPITAL IN NORTH EAST INDIA

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INTRODUCTION. Catheter associated urinary tract infection is an important cause of mortality and morbidity. Its incidence in India as per available study is 22.22% among all nosocomial infections[1]. Its burden on healthcare is immense. With changing time and increasing no of hospital beds worldwide, which subsequently increasing the no of patients being catheterized, it's now more relevant to address this menace with new innovative techniques.
MATERIAL AND METHOD. All patients with a urinary catheter were enrolled in the study from 15th January'2017 till 31st December 2017 and data's were collected. Apart from maintaining the standard CAUTI bundle suggested by CDC, we have introduced one simple intervention in our CAUTI prevention bundle. That is application of 1.0% chlorhexidine gel every 6 hourly. The gel is applied over the outer surface of urinary catheter starting from meatal part proximally to the catheter fixation part

distally to the urobag. The calculation of CAUTI rate is done using the following formula.
Number of cauti in the month
CAUTI Rate : ---------- x1000
Number of Catheter days
RESULTS. Starting with a CAUTI rate of 7.02% in January , the rate declined to 1.01% within a month and sustained at 4.22% and 3.3% in the subsequent months. The rates are remains within the benchmark of 6.6 CAUTIs per 1000 Catheter days as per International Nosocomial Infection Control Consortium for developing countries- 2011. The catheter days in the study was 661(minimum) to 1026 (maximum) per month during the study period.
Discussion: Significant serious efforts are being made worldwide to decrease this nosocomial problem. There are good guidelines made available by various bodies , especially CDC in curbing this problem. New researches are still going on in this area. There are studies which shows effectiveness of antimicrobial urinary catheters but these are costly[2]. One systemic review concludes that this of course decreases the catheter associated bacteriuria and funguria but there is variable evidences and future studies are recommended[3]. In our study we emphasized on using a very simple and cheap method and the results are encouraging. There is significant drop in the incidence of CAUTI as illustrated in the figures.
CONCLUSION. We therefore conclude that application of chlorhexidine gel (1%) on urinary catheter has a positive impact on decreasing CAUTI rate. This is specially very useful in resource limited areas where there is dearth of adequate number of trained personals. Further more extensive studies are required as it is a single centered study.
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055 - BLOOD TRANSFUSION PRACTICE IN THE INTENSIVE CARE UNIT: OPTIMISING THE CROSS-MATCH-TO-TRANSFUSION RATIO

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INTRODUCTION. Over-ordering of blood products lead to wastage of blood bank resources and non-availablity of blood products while they are reserved for a patient. This exerts a substantial burden on the Blood Transfusion Service (BTS) which is facing national shortages.
OBJECTIVES. Guidelines from the British Society of Haematology are based on a cross-match-to-transfusion (C:T) ratio of 2[1]. This study aims to look at the compliance of C:T ratio in our General ITU (GITU) with national guidance and potential cost savings.
METHODS. Retrospective analysis of the blood ordering practices in the GITU at Aberdeen Royal Infirmary (ARI) over a 12-month period was carried out using an anonymised database by the BTS and compared to other critical care units in ARI.
RESULTS. This data set reflects on the blood transfusion practice in the GITU and does not include data from patients cross-matched elsewhere prior to being admitted to the unit. A total of 317 cross-match requests were processed during the 12-month period. A total of 932 units of blood were issued compared to 340 units of blood transfused on the unit, resulting in an overall C:T ratio of 2.74. 144 of the cross-match requests had a C:T ratio > 2. 117 of these requests did not result in a blood transfusion.
The table below shows a comparison of the C:T ratio amongst the critical care units in ARI. There were data generated by the electronic system labelled 'Ward 201' which could represent either the General or Cardiac ITU. The source of these requests were unidentifiable as the data has been anonymised.

	General Intensive Care Unit	Cardiac Intensive Care Unit	Medical High Dependency Unit	Surgical High Dependency Unit	´Ward 201´
No. of months	6	2	11	3	2

where C:T ratio >2					

[Comparison of C:T ratio of all critical care units]

The cross-match service at ARI costs between £33 to £124 including staffing and consumable costs, while a standard unit of red cells cost £128. Unused blood products are returned to BTS 24 hours after the time they are requested for. Comparatively, at £24 per sample, patients who may require blood transfusion could have a group-and screen sample obtained and stored for up to 7 days. If the patient is transfused, the sample will remain valid for 48 hours after transfusion. The potential savings in the 12-month period is approximately £11316.

CONCLUSION. Blood is a precious resource. Care must be taken to minimise wastage. Patients admitted to the GITU who may require blood products should have a group-and-save sample obtained. Specific units of blood products could then be requested should clinical needs arise. Only patients requiring urgent or immediate blood transfusion should be cross-matched. However, clinical judgement should be used when certain patients are predicted to require large blood volumes.

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ACKNOWLEDGMENT. We would like to thank the staff at BTS for their contribution in data collection.

056 - PROGNOSTIC AND OUTCOME FACTORS RELATED TO ACUTE PANCREATITIS AND ABDOMINAL COMPARTMENT SYNDROME IN ICU.

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OBJECTIVE. Intra-abdominal hypertension (IAH) and abdominal compartment syndrome (ACS) are relatively frequent and severe complications in patients with acute pancreatitis so it is important to assess the factors affecting their development and evolution.

METHODS. retrospective study in patients with acute pancreatitis admitted to ICU in a third level hospital throughout 2015 and 2016. Comparative analisys by Student-Welch, Mann-Whitney and Chi-square test.

RESULTS. 27 patients were analysed. Mean age 69 years-old with 74% men. Ethiology was 44% biliary, 29% idiopatic, 11.1% enolic and 3.7% after ERCP. 48.1% were severe, 48.1% moderate and 3.7% light. Average stay was 20,6 days in ICU and 63 in hospital. Average APACHE II of 19 IC(95% (16,5-21.7) and SOFA of 5,7 IC95%(4,6-6,7). There was no statistical significance relating the scores with IAH development but higher APACHE II developed ACS (p=0,03).

12 patients developed IAH (44%) evolving to ACS 8 of them (66.7%, 29% from the total of patients). Organ failures: 75% developed haemodinamic, 75% renal, 66.7% respiratory and 8.3% hematological. As the only precipitating factor we found that patients with IAH presented higher fluid balances (p=0,038).

Treatment: Aspiration through nasogastric tube was performed in 91.7%, everyone received prokinetics agents, only 25% presented zero fluid balance and 21.7% kept abdominal perfusion pressure above 50 mmHg (Step 1). 83,3% received diuretics (Step 2). 88,3% remained sedated, 41.7% with neuromuscular blockade and 66,7% needed renal ultrafiltration (Step 3). In 2 cases surgical abdominal decompression was performed (Step 4). Early enteral nutrition was on 14,8% and 40.7% parenteral.

Mortality was higher when respiratory failure was developed (p=0,03). Mortality was not related to the level of IAH and it was significantly higher in patients with ACS (p=0,04). Average ICU stay was higher in pancreatitis with IAH (8 days vs 19, p=0,027).

CONCLUSIONS.

1) Fluid balance should be cautious in patients with pancreatitis in order to minimize de IAH development, that´s related to a higher ICU stay.

2) Mortality in case of IAH is related with develop of respiratory failure and with evolution to ACS.

057 - PROMOTING CRITICAL CARE NURSES' SATISFACTION WITH THE PROCESS OF THE WITHDRAWAL OF LIFE-SUSTAINING TREATMENT - AN EXPERIENCE LEARNED FROM THE IMPLANTATION OF A STANDARDIZED PROTOCOL

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INTRODUCTION. Along with the development of the society and the improvement of patient-physician communication, the practice of palliative care and hospice has become widely acceptable to people living in Taiwan. However, as the practice becomes more common, many practical difficulties, such as medication usage, ventilation setting, have emerged. Unexceptionally, the hospital in our study also encountered some of those difficulties that impede the care of the terminally ill patients. To improve the quality of care, the research group formulated an intervention called Present, Empathy, Appearance, Comfort, Environment (PEACE) protocol and conducted this study to compare the satisfaction of the intensive care nurses on withdraw life-sustaining treatment, before and after the implementation of protocol.
OBJECTIVES. This study aimed at evaluating the feasibility and practicability of promoting intensive care nurses' satisfaction by implementing standardized processes specially formulated for the withdrawal of life-sustaining treatment.
METHODS. Based on the quality indicator of End-of-Life Care, we formulated a standardized protocol that accentuates five cardinal elements—i.e., Present, Empathy, Appearance, Comfort, Environment (also called as PEACE). A self-administered questionnaire was designed to evaluate the satisfaction with the process of the withdrawal of life-sustaining treatment. Our study enrolled 42 nurses who have worked in the intensive care unit over 12 months and have participated in at least one withdrawal process. The nurses completed the questionnaire before and after the implementation of the PEACE Withdrawal Protocol (which was implemented in February 2017). Between February and October 2017, there were 17 withdrawal processes carried out in accordance with the PEACE Withdrawal Protocol.
RESULTS. The response rate to the questionnaire-based survey is 92% (39 out of 42 critical care nurses). Before the implementation of the PEACE Withdrawal Protocol, the nurses' average satisfaction of withdraw life-sustaining treatment is 82.4%, whereas after the protocol's implementation, the nurse's average satisfaction of withdraw life-sustaining treatment is 97.6%.
CONCLUSIONS. Our results demonstrate significant improvement of nurses' satisfaction with the process of withdraw life-sustaining treatment for the terminally ill patients. Therefore, the study supports the utilization of standardized protocol to guide the process of withdraw life-sustaining treatment in the setting of intensive care.
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058 - PSYCHOLOGICAL DISORDERS IN RELATIVES OF CANCER PATIENTS IN THE ICU

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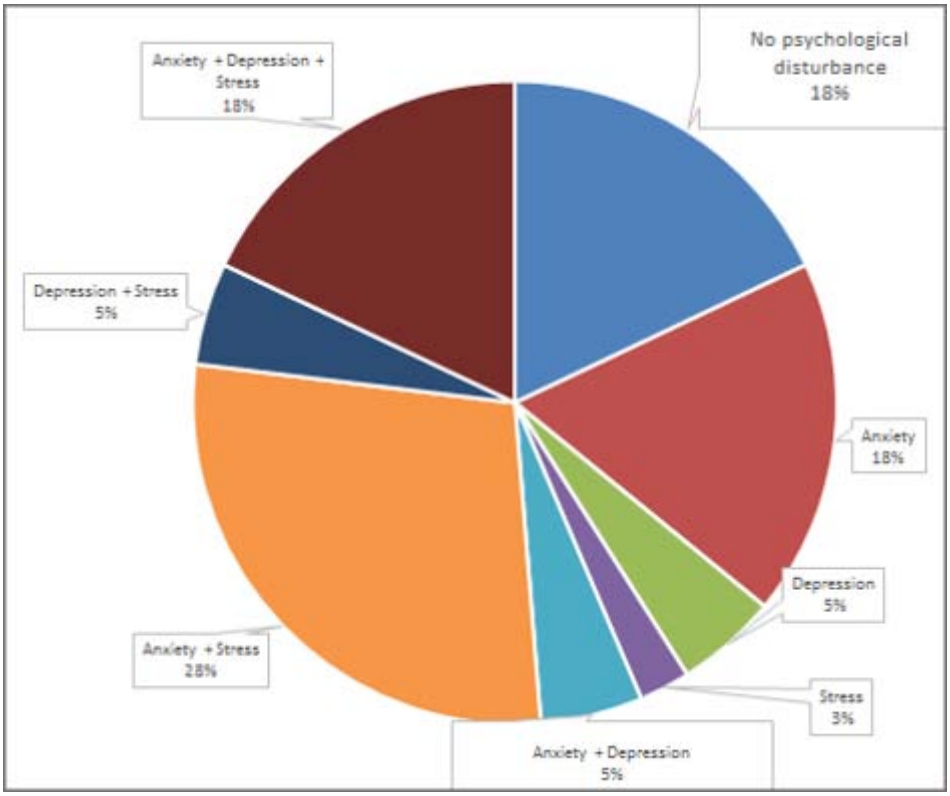
INTRODUCTION. The impact of the diagnosis of cancer and of the critical illness (and subsequent admission to the ICU) affects not only the patient, but also very intensely his/her family.
OBJECTIVES. The objective of this study was to evaluate the incidence of psychological disorders in relatives of current cancer patients admitted to the ICU, and analyse factors associated to their incidence.
METHODS. Retrospective study of a cohort of adult patients attended and evaluated by the psychologist during ICU stay, in a Cancer Hospital. Only communicating patients who were able to undergo psychological evaluation were included in the sample. All patients had (1) a diagnosis of

cancer, and also (2) some kind of psychological disorders diagnosed by the psychologist in the ICU. All the evaluated relatives had visited at least once the patient or accompanied him/her during the ICU stay; only one relative per patient was assessed.
RESULTS. A total of 39 relatives from 39 patients (62% male, 58.0 years old, 87.2% solid tumors - most common: 48% gastrointestinal, 19% head & neck) were evaluated. Among the patients, 76.9% had anxiety, 38.5% depression and 41.0% disturbances of thought organization. Among the relatives, the incidence of psychological disturbances was 82.0% (Figure 1). Although there was no statistical difference, the families of the patients who were recently diagnosed (at the same hospitalisation) and those who had higher ICU length of time and mortality had a trend to higher incidence of psychological disorders.



[Figure 1]

CONCLUSIONS. The incidence of psychological disorders (anxiety, depression and stress) among family members of cancer patients in ICU was very high, mainly in recently diagnosed and more severelly ill.

059 - EFFECT OF OBESITY IN CRITICALLY ILL PATIENTS; MUSCLE QUALITY AS AN EXPLANATORY OUTCOME FOR THE "OBESITY PARADOX"

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INTRODUCTION. Obesity and overweight are associated with an increased risk of death in the general population, but in specific disease conditions, a decrease in mortality has been reported. The 'obesity paradox' of critical illness refers to better survival with a higher body mass index.Hypercatabolism in the acute phase of the critical illness is presumed to be an adaptive response providing the essential fuel for energy production in vital organs. However, when hypercatabolism persists it may result in muscle wasting and weakness.
Skeletal muscle quality is recognized as a marker of function in healthy individuals and critically ill patients. To determine muscle histology on an ICU; a muscle biopsy is needed. However, this procedure is invasive. By using a novel non-invasive assessment of muscle histology we aim to study muscle quality in obese and non-obese critically ill patients.
METHODS. Muscle Quality index will be determined using traditional non-invasive ultrasound, which

involves pacing a probe over e predefined area of the quadriceps muscle (rectus femoris, vastus lateralis, vastus medialis and intermedius). The pixel-intensity-complex of the muscle fibers was measured to quantify the amount of contractile versus non-contractile structures within the region of interest. The mean pixel intensity was averaged from the 6 cropped and segmented scans (3 long-axis and 3 short axis scans) and scaled to create the Muscle Quality Index with MuscleSound® software. This non-invasive assessment is called Virtual Muscle Histology.
RESULTS. In the total group (N=26) were 9 patients defined as obese by a BMI >30kg/m2. In this obese subgroup, the wasting patterns were distinctly different than the non-obese group, when comparing sepsis and neurotrauma. The obese group had a higher muscle quality index by volume in regard to the non-obese, by admittance ICU. The speed of wasting, as defined in decline in muscle quality, was lower in the first 4-5 days in the obese group in comparison with the non-obese.
CONCLUSION. Critically ill patients with obesity seem to have higher muscle quality, as measured by the virtual muscle histology assessment, at admittance compared to non-obese ICU patients. This might be the metabolic protective shield also described as the "obesity paradox".

060 - AMBULANCE 12-LEAD ELECTROCARDIOGRAPHY TELEMETRY SYSTEM IN TAIWAN: 8-YEAR EXPERIENCE

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OBJECTIVE: Previous studies showed the benefits of ambulance 12-lead electrocardiogram (ECG) in patients with ST-elevation myocardial infarction (STEMI), including to shorten ischemia to balloon time, to avoid patients to transfer to non percutaneous coronary intervention (PCI) hospital and further to improve the outcomes of these STEMI patients. However, it remained a challenging issue to set up ambulance 12-lead electrocardiogram system. Therefore, the aim of this study is to investigate the development of ambulance 12-lead electrocardiogram in Taiwan.
METHODS. There were 20 cities or counties in Taiwan. The establishment of ambulance ECG system is complicated in Taiwan, because it requests the cooperation among multiple hospitals, fire bureau and department of health in different city councils. This study collected data from 2011 to 2018. The percentage of ambulance ECG system establishment in Taiwanese cities or counties was analyzed. There were 3 different ambulance ECG system in Taiwan, including simplified telemetry ECG system, multi-function telemetry ECG system and freeware app transmitted ECG system.
RESULTS. Since 2012, Kaohsiung City is first city to set up ambulance ECG system in Taiwan. There were 2, 4, 7, 9, 13, and 16 cities or counties to set up ambulance ECG system in 2013, 2014, 2015,2016, 2017 and 2018. In Taiwan, 12 cities or counties used simplified telemetry ECG system (75%). Two cities (12.5%) used multi-function telemetry ECG system and other 2 cities (12.5%) used freeware app transmitted ECG system. In total, the percentage of ambulance ECG system establishment in Taiwanese cities or counties is 5%, 10%, 20%, 35%, 45%, 65% and 80% in 2012, 2013, 2014, 2015, 2016, 2017 and 2018.
CONCLUSIONS. This study showed, from 2011 to 2018, the percentage of ambulance ECG system establishment in Taiwanese cities or counties increase from 0% to 80%, However, there were still limited fire bridges to have this saving system in most of cities or counties, which might be due to lack of government regulations and finicial support.