

has become commonplace in the management of children undergoing anticancer treatment. Several types of CVC are available, while information on complications observed in children is scarce. We describe the experience of two tertiary care centers in Italy that prospectively followed up three types of CVC used at both institutions over a 30-month period. **PATIENTS AND METHODS:** Between January 2000 and May 2002, double-lumen (DL) or single-lumen (SL) Hickman-Broviac (HB) catheters, and single-lumen pressure-activated safety valve (PASV) catheters were used and prospectively evaluated. Four types of possible complication were defined a priori: mechanical, thrombotic, malfunctioning and infectious. **RESULTS:** Four hundred and eighteen CVCs (180 SL-HB, 162 DL-HB and 76 PASV) were inserted in 368 children, for a total of 107 012 catheter days at risk of complication. At least one complication occurred while using 169 of the devices (40%): 46% of the DL-HB, 46% of the PASV and 33% of the SL-HB ($P = .02$) catheters. Subjects with hematological malignancies or non-malignant diseases had significantly more complications than those with solid tumors ($P < .0001$). Overall, 234 complications were documented: 93 infectious [complication rate per 1000 catheter days at risk (CR) = 0.87], 84 malfunctioning (CR = 0.78), 48 mechanical (CR = 0.45) and nine thrombotic (CR = 0.08). SL-HB had statistically fewer infectious complications, while PASV had more mechanical complications. In a multivariate regression model, the most significant risk factors for having a CVC complication were hematological disease [relative risk (RR) = 3.0; 95% confidence interval (CI) 1.8 to 4.8] and age < 6 years at CVC insertion (RR = 2.5; 95% CI 1.5–4.1). As for the type of CVC, compared with SL-HB, the DL-HB catheter had a statistically significant two-fold increased risk of any complication (RR = 2.1; 95% CI 1.2–3.6), while the PASV catheter had a borderline RR of 1.8 (95% CI 1.0–3.6). Analysis by tumor type showed a higher risk of any kind of complication in patients with solid malignancies who had received a DL-HB catheter as compared with an SL-HB catheter (RR = 7.2; 95% CI 2.8–18.7). **CONCLUSIONS:** CVCs may cause complications in up to 40% of patients, with type of CVC, underlying disease and patient age being the three main factors that affect the incidence of CVC-related complications. SL-HB catheters have the best performance.

AUTHORS' ABSTRACT

HEPATOBIILIARY

Tateishi R, Shiina S. Percutaneous radiofrequency ablation for hepatocellular carcinoma. An analysis of 1000 cases. *Cancer* 2005;103(6):1201–1209.

• **BACKGROUND:** Radiofrequency ablation (RFA) was introduced recently as a therapeutic modality for hepatocellular carcinoma (HCC), an alternative to percutaneous ethanol injection therapy (PEIT), which is coming into use worldwide. Previously reported treatment efficacy and complication rates have varied considerably. **METHODS:** Between February 1999 and February 2003, the authors performed 1000 treatments of RFA to 2140 HCC nodules in 664 patients with a cooled-tip electrode at the University of Tokyo Hospital (Tokyo, Japan). Short-term and long-term complications were analyzed by treatment and session basis. Cumulative survival was also assessed in 319 patients who received RFA as primary treatment (naive patients) and 345 patients who received RFA for recurrent tumor after previous treatment including resection, PEIT, microwave coagulation therapy, and transarterial embolization (nonnaive patients). **RESULTS:** A total of 40 major complications (4.0% per treatment, 1.9% per session) and 17 minor complications (1.7% per treatment, 0.82% per session) were observed during the observation period until March 31, 2004. There were no treatment-related deaths. Surgical intervention was required in one case each of bile peritonitis and duodenal perforation. The cumulative survival rates at 1, 2, 3, 4, and 5 years were 94.7%, 86.1%, 77.7%, 67.4%, and 54.3% for naive patients, whereas the cumulative survival rates were 91.8%, 75.6%, 62.4%, 53.7%, and 38.2% for nonnaive patients, respectively. **CONCLUSIONS:** The authors confirmed the safety and efficacy of RFA for HCC in a large-scale series and long-term prognosis was satisfactory.

AUTHORS' ABSTRACT

CARDIAC/CORONARY

Sabatine MS, Cannon CP. Addition of clopidogrel to aspirin and fibrinolytic therapy for myocardial infarction with ST-segment elevation. *N Engl J Med* 2005;352(12):1179–1189.

• **BACKGROUND:** A substantial proportion of patients receiving fibrinolytic therapy for myocardial infarction with ST-segment elevation have inadequate reperfusion or reocclusion of the infarct-related artery, leading to an increased risk of complications and death. **METHODS:** We enrolled 3491 patients, 18 to 75 years of age, who presented within 12 hours after the onset of an ST-elevation

myocardial infarction and randomly assigned them to receive clopidogrel (300-mg loading dose, followed by 75 mg once daily) or placebo. Patients received a fibrinolytic agent, aspirin, and when appropriate, heparin (dispensed according to body weight) and were scheduled to undergo angiography 48 to 192 hours after the start of study medication. The primary efficacy end point was a composite of an occluded infarct-related artery (defined by a Thrombolysis in Myocardial Infarction flow grade of 0 or 1) on angiography or death or recurrent myocardial infarction before angiography. **RESULTS:** The rates of the primary efficacy end point were 21.7% in the placebo group and 15.0% in the clopidogrel group, representing an absolute reduction of 6.7% points in the rate and a 36% reduction in the odds of the end point with clopidogrel therapy (95% confidence interval, 24–47%; $P < .001$). By 30 days, clopidogrel therapy reduced the odds of the composite end point of death from cardiovascular causes, recurrent myocardial infarction, or recurrent ischemia leading to the need for urgent revascularization by 20% (from 14.1–11.6%, $P = .03$). The rates of major bleeding and intracranial hemorrhage were similar in the two groups. **CONCLUSIONS:** In patients 75 years of age or younger who have myocardial infarction with ST-segment elevation and who receive aspirin and a standard fibrinolytic regimen, the addition of clopidogrel improves the patency rate of the infarct-related artery and reduces ischemic complications.

AUTHORS' ABSTRACT

Cram P, Rosenthal GE. Cardiac revascularization in specialty and general hospitals. *N Engl J Med* 2005;352(14):1454–1462.

• **BACKGROUND:** The emergence of specialty hospitals focusing on narrow procedural areas has generated controversy, although little is known about their quality. **METHODS:** We conducted a retrospective cohort study of 42,737 Medicare beneficiaries who underwent percutaneous coronary intervention (PCI) and 26,274 who underwent coronary-artery bypass grafting (CABG) during 2000 and 2001 in specialty cardiac hospitals (15 for PCI and 15 for CABG) and general hospitals (82 for PCI and 75 for CABG) in the same markets. Administrative data were used to compare patients' characteristics, hospital procedural volumes, and patient outcomes. **RESULTS:** Patients undergoing PCI or CABG in specialty hospitals were less likely to have coexisting conditions than those being treated at general hospitals and were less likely to have had an acute