PAZIENTE EMATOLOGICO: INDICAZIONI TERAPEUTICHE E SCELTA DEL DEVICE

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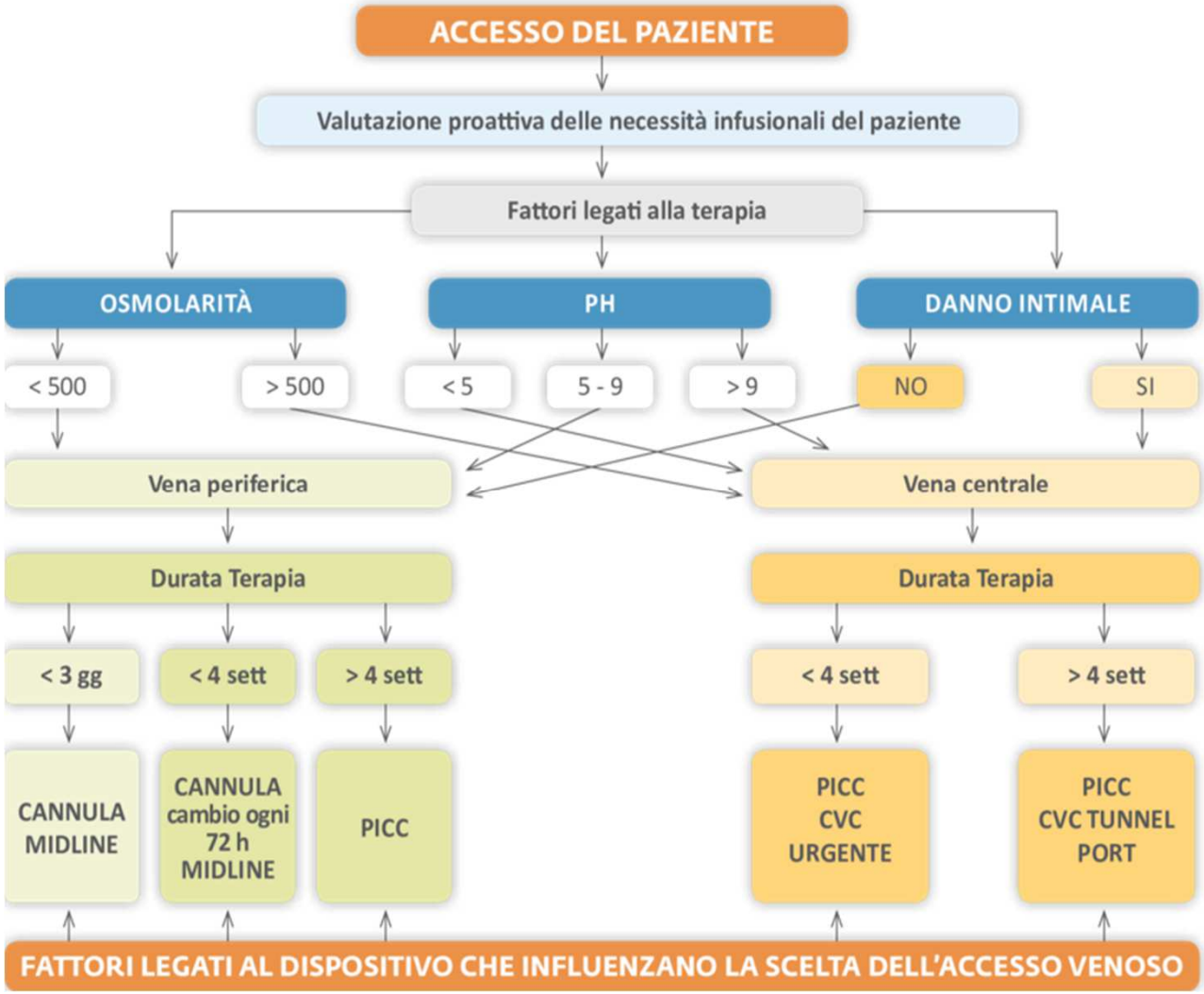
BARLETTA

Il paziente ematologico

- Prelievi frequenti
- Terapie a medio/lungo termine
- Trasfusioni
- Terapia antimicrobica
- HSCT

Il paziente ematologico

- Immunocompromesso per la malattia
- Immunocompromesso per la terapia
- Piastrinopenico
- Coagulopatico (danno endoteliale da citochine, VEGF, c.m., terapie citostatiche etc.)

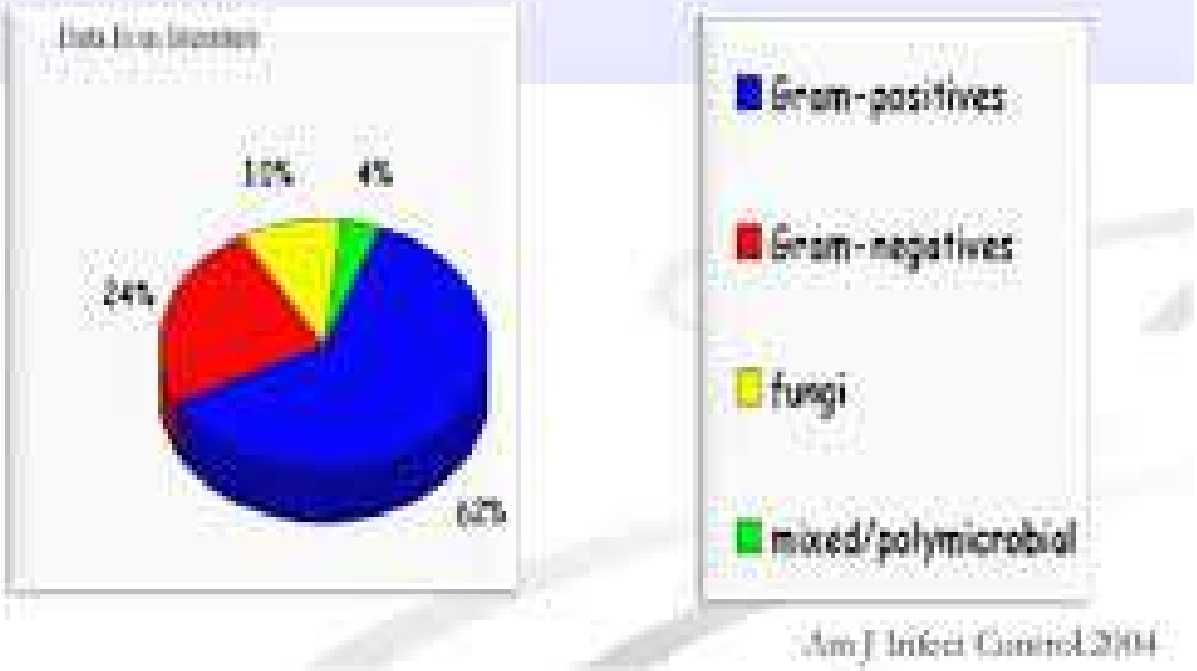

ACCESSO DEL PAZIENTE
Valutazione proattiva delle necessità infusionali del paziente
Fattori legati alla terapia
OSMOLARITÀ
PH
DANNO INTIMALE
< 500
> 500
< 5
5 - 9
> 9
NO
SI
Vena periferica
Vena centrale
Durata Terapia
Durata Terapia
< 3 gg
< 4 sett
> 4 sett
< 4 sett
> 4 sett
CANNULA MIDLINE
CANNULA cambio ogni 72 h MIDLINE
PICC
PICC CVC URGENTE
PICC CVC TUNNEL PORT
FATTORI LEGATI AL DISPOSITIVO CHE INFLUENZANO LA SCELTA DELL'ACCESSO VENOSO

TIPOLOGIA DI INFEZIONI

- Infezione locale
  - Infezione del sito di inserzione non tunnell.
  - Infezione del tratto sottocutaneo del catetere tunnellizzato
  - Infezione della tasca del Port
- Infezione sistemica
  - Sepsi correlata a catetere
  - Sepsi correlata all'infusione

COMPLICANZE TARDIVE: Infezioni

Incidenza 2.1/1000 gg cvc



Am J Infect Control 2004

- Coagulasi neg. Gram + and Staphilococcus Aureus are the leading cause of CRBSI in pts. with cancer
- Gram – and fungi increasing number
- An antimicrobial resistance is being observed

CVC: COMPLICANZE TARDIVE

Trattamento

La terapia di una infezione CVC correlata deve essere sempre eseguita per via e.v. e in ciascun lume del CVC

La durata del trattamento prevista dovrà essere in media di 2 settimane e comunque mai inferiore ai 10 giorni

Royal College of Nursing 2010

CVC: COMPLICANZE TARDIVE

COMPLICANZE TROMBOTICHE:
Fattori di rischio

- Patologia
- Danno endoteliale
- Materiale e diametro cvc
- N° lumi
- Posizione e sede di inserzione
- Infezioni
- Numero di piastrine
- Precedenti cvc
- Trombofilia
- Sistema di fissaggio

Kappers- Klunne MC Cancer 1989

Complications from long – term indwelling CVC in hematologic pts. with special reference to infection.

43 pts. (mainly L.A) randomized to receive a double lumen CVC or a totally implantable system.

Totally implantable systems proved to be as safe as double lumen CV lines.

GROEGER JS. ANN INTER MED 1993

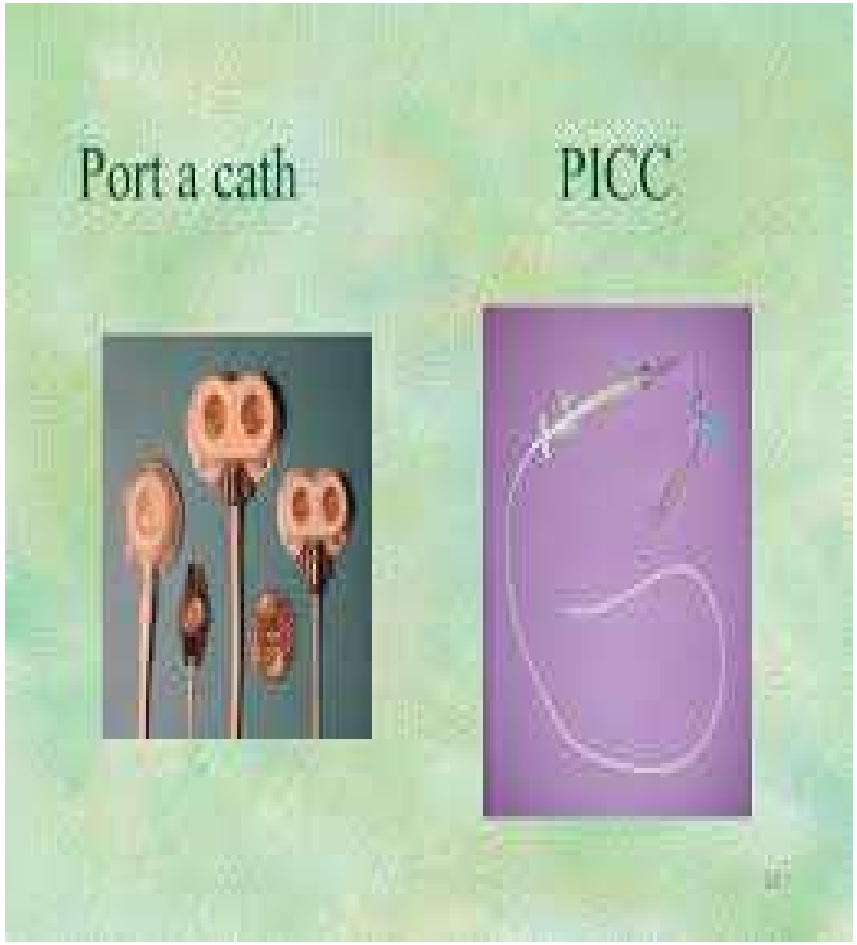
Infectious morbidity associated with long-term use of venous access device in pts. with cancer

1431 pts.

The incidence of infection per device was 12 times greater with catheters than with ports.

Pts. with solid tumors were the least likely to have related infectious morbidity compared with those with hematologic cancers.

PICC o PORTH ?



Negli anni recenti, l’ uso dei PICC è diventato progressivamente più frequente e diffuso, ma a fronte di ciò ci sono pochi reports in letteratura del loro impiego nei pazienti ematologici.

WORTH LJ. SUPPORT CARE CANCER 2009

"Infective and thrombotic complications of CVC in patients with hematological malignancies: prospective evaluation of nontunneled devices."

106 CVCs (75 per, 31 non tunn) in 66 pts.

CR-BSI rates in our hematology population are comparable to prior reports. A low rate of exit-site infection and high proportion of thrombotic complications were observed. No significant differences in thrombotic or infective complications were evident when PICC and nontunneled devices were compared.

PICC devices are a practical and safe option for management of hematological patients

- The reasons for the differences in infectious complications is uncertain but may be attributable to type of disease, intensity of therapy, frequency with wich devices are accessed, or duration of neutropenia

Johannson E. Acta Oncologica 2013

“ Advantages and disvantages of PICC compared to other cental venous lines: a systematic review of the literature”

Althoug PICCs are frequently used in oncology, scientific evidence supporting any advantage or disvantage of PICC when comparing with traditional central venous lines is limited, apart from a tendency towards increased risk for DVT and a decreased risk for catheter occlusion with PICC.

Zhang XH Thromb res 2016

“ High- dose corticosteroid associated with catheter-related thrombosis after allogeneic hematopoietic stem cell transplantation”

8 years period , catheters were placed in 2896 pts. 40 pts (1,38%) developed CRT, 11 associated with CVC and 29 with PICC.

The use of high-dose corticosteroid is correlated with the onset of CRT. Tromboprophilaxis require further investigation.

Refaei M. Ann Hematol 2016

“ Incidence of catheter-related thrombosis in acute leukemia pts. : a comparative, retrospective study of the safety of peripherally inserted vs. centrally inserted CVC.”

A comparison of the incidence rate of CRT in leukemia pts. who received either a PIC vs CICC.

The secondary outcomes included rates of infectious and mechanical complications.

663 pts.; 1331 insertions; 82 (11,7%) CRT in the PICC group- 41(6,5%) in the CICC group.

A PICC when compared to CICC, was a significant risk factor for CRT ($p<0.0001$)

Hashimoto Y./ Internal Medicine 2017

“ Experience of peripherally inserted CVC in pts. with Hematologic Diseases”.

AML 53 (37,3%)

ML 51 (35,9%)

MDS 11 (7,7%)

MM 8 (5,6%)

CML/BC 5 (3,6%)

AA 5 (3,6%)

Low CRBSI incidence rate,

No evidence of serious complications with PICC placement,

PICCs can be used for blood collection, blood transfusion, drug administration, stem cell transplantation without problems,

- The uselfulness of PICCS in terms of medical economics merit discussion.
- The use of PICCS reduces the incidence of CRBSI and can help reduce the costs of antimicrobial agents and the duration of additional time in the hospital.
- The cost for exchanging PIV catheters six times is almost the same as that for using a PICC once.
- When infusion is anticipated to be needed for more than six days, the use of PICCs can reduce costs and is thus reccomended by the guidelines

Guidelines for the prevention of intravascular catheter-related infections

Naomi P. O'Grady,[a] Mary Alexander,[b] Lillian A. Burns,[c] E. Patchen Dellinger,[d] Jeffrey Garland,[e] Stephen O. Heard,[f] Pamela A. Lipsett,[g] Henry Masur,[a] Leonard A. Mermel,[h] Michele L. Pearson,[i] Issam I. Raad,[j] Adrienne G. Randolph,[k] Mark E. Rupp,[l] Sanjay Saint,[m] and the Healthcare Infection Control Practices Advisory Committee (HICPAC) (Appendix 1)

Bethesda, Maryland; Norwood, Worcester, Boston, Massachusetts; Staten Island, New York, Seattle, Washington; Milwaukee, Wisconsin; Baltimore, Maryland; Rhode Island; Atlanta, Georgia; Houston, Texas, Omaha, Nebraska; and Ann Arbor, Michigan

These guidelines have been developed for healthcare personnel who insert intravascular catheters and for persons responsible for surveillance and control of infections in hospital, outpatient, and home healthcare settings. This report was prepared by a working group comprising members from professional organizations representing the disciplines of critical care medicine, infectious diseases, healthcare infection control, surgery, anesthesiology, interventional radiology, pulmonary medicine, pediatric medicine, and nursing. The working group was led by the Society of Critical Care Medicine (SCCM), in collaboration with the Infectious Diseases Society of America (IDSA), Society for Healthcare Epidemiology of America (SHEA), Surgical Infection Society (SIS), American College of Chest Physicians (ACCP), American Thoracic Society (ATS), American Society of Critical Care Anesthesiologists (ASCCA), Association for Professionals in Infection Control and Epidemiology

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Cornillon J. Support Care Cancer 2017

“ Prospective evaluation of systematic use of PICC lines for the home care after Allogeneic HSCT”

Long term catheters are often necessary for outpatient care after an Allogeneic SCT.

37 pts. ; in 31 pts PICC was used for hydratation, antibiotics, intravenous human IG, transfusions, extracorporeal photopheresis, chemotherapy, artificial nutrtion, palliative care.

PICC were used with a median duration of 67 days.

PICC is a safe long-term venous access for home care after HSCT

Ann Hematol. 2015 Sep;94(9):1451-6. doi: 10.1007/s00277-015-2387-y. Epub 2015 May 3.

Prediction of central venous catheter-related bloodstream infections (CRBSIs) in patients with haematologic malignancies using a modified Infection Probability Score (mIPS).

Schalk E[1], Hanus L, Färber J, Fischer T, Heidel FH.

46° congresso SIE. Roma, 15-18/10/17

- Cerchione C., Picardi M, Di Perna M., Della Pepa R., Pugliese N., Pane F.
- " Front- line vascular access devices in acute leukemias – PICC (Arm A) versus traditional CVC (arm B): a phase IV randomized trial (NCT02405728)"
- 152 pts (median age 47) with acute leukemias randomly (1:1) assigned to PICC or CVC (Seldinger technique).
- The median duration of in situ catheter placement was 5 months: 6 months in arm A vs 3 months in arm B. In the arm A: CRT in 8 pts, CRBSI in 4 pts. In the arm B : CRT in 20 pts.; CRBSI in 15 pts.
- PICCs were significantly associated with fewer major complications than traditional CVCs.
- Preliminary observations suggests that the use of PICC in a high –risk hematological population represents an advance in term of decrease of complication rate and improvement of quality of life for pts. with acute leukemia.

STUDY PROTOCOL Open Access

Administration of taurolidine-citrate lock solution for prevention of central venous catheter infection in adult neutropenic haematological patients: a randomised, double-blinded, placebo-controlled trial (TAURCAT)

C. Gudiol[1,8,9*], S. Nicolae[1], C. Royo-Cebrecos[1,9], M. Aguilar-Guisado[2,9], I. Montero[3], C. Martín-Gandul[2,9], M. Perayre[4], D. Berbel[5], M. Encuentra[6], M. Arnan[7], J. M. Cisneros-Herreros[2,9] and J. Carratalà[1,8,9]

Prospective, multicenter, randomized, double blinded trial;
pts. adults with hematological cancer expected to develop > 7 days neutropenia; who have a non-tunnelled CVC

- TAUROLIDINE-CITRATE-HEPARIN (lock)
- HEPARIN ALONE

RESULTS

- Lock solution with Taurolidine-citrate-heparine is more effective than placebo for preventing CVC catheter infections in high – risk neutropenic hematological patients and, consequently, CRBSI
- Taurolidine is active against Gram +, Gram – and fungi

STUDY PROTOCOL Open Access

Prophylactic platelet transfusion prior to central venous catheter placement in patients with thrombocytopenia: study protocol for a randomised controlled trial

Emma K. van de Weerdt[1,2,5*], Bart J. Biemond[4], Sacha S. Zeerleder[4], Krijn P. van Lienden[3], Jan M. Binnekade[1], Alexander P. J. Vlaar[1,2] and Study collaborative

- Pts. with a platelet count between 10 and 50000 in indication for CVC placement
- First prospective, randomized controlled trial powered to test the hypothesis of omitting plt transfusion prior CVC cannulation leads to an equal occurrence of clinical relevant bleeding complications in haematologic patients with thrombocytopenia.

Cochrane Library

Cochrane Database of Systematic Reviews

Anticoagulation for people with cancer and central venous catheters (Review)

Kahale LA, Tsolakian IG, Hakoum MB, Matar CF, Barba M, Yosuico VED, Terrenato I, Sperati F, Schünemann H, Akl EA

CVC placement increases risk of thrombosis in people with cancer

- Randomized controlled trials assessing the benefits of UFH, LMWH, VKA
- 3420 participants
- Moderate-certainty evidence that LMVH reduces catheter-related VTE compared to no LMWH
- Anticoagulation should balance the possible benefit of reduced thromboembolic complications with the possible harms of anticoagulants

Clin Appl Thromb Hemost. 2016 Nov;22(8):779-784. Epub 2015 Apr 17.

Biomarkers for Prediction of Central Venous Catheter Related-Thrombosis in Patients With Hematological Malignancies.

Boersma RS[1], Hamulyak K[2], van Oerle R[3], Tuinenburg A[4], Ten Cate-Hoek AJ[3], Schouten HC[2].

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4 Amphia Academy, Amphia Hospital Breda, Breda, the Netherlands.

Univariate analysis

- WBC count > 10600
- FVIII activity
- PAI-1 inhibitor > 12.2 IU/m

were found to be associated with development of symptomatic CVC – related thrombosis

Conclusioni

- PICC sembra essere preferibile agli altri devices nel paziente ematologico, anche se con un più alto rischio di CRT.
- Può essere utilizzato per terapie di durata medio/lunga
- Devono essere considerati anche i vantaggi di tipo economico/sanitario
- La collaborazione fra ematologi, anestesisti ed equipe infermieristiche, soprattutto nel monitoraggio del paziente, è il segreto del buon outcome.

Grazie per l’ attenzione

Rete Ematologica Pugliese

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