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CENTRAL VENOUS CATHETER MANAGEMENT

Caregiver BOOKLET
For Home Care



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Italy - 2018



Project Number: 2016-1-RO01-KA203-024630



Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

*This booklet represents a little help for families, parents, caregivers,
who have to care a patient that need an infusion therapy at home
by Central Venous Catheter, after discharge from hospital*





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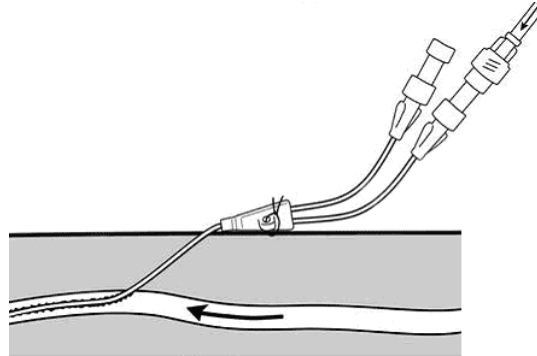
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1. The Central Venous Catheter (CVC)

What is a Central Venous Catheter?



It is a small rubber tube positioned in a vein of large caliber; the external termination, which will be connected to the infusion, can be: under the collarbone, on the neck, on the groin, or on the arm. Depending on the type, it can last from one month to a few years.

Components of a CVC

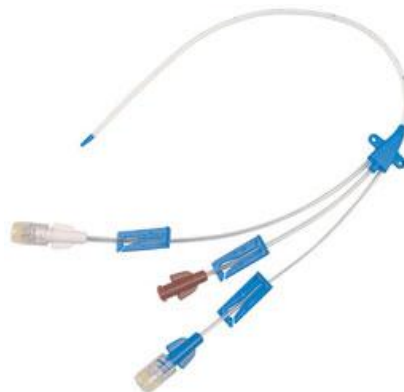
On the external termination we find:

Anchoring lugs: they have the function of keeping the CVC in position and can be fixed with sutures or with another anchoring system

Faucets: they have the function of being able to connect more drip at the same time, they are not always present.

Clave Connector or Perforable Cap: both have the function of closing the tap (if present) or the external termination of the CVC, as well as of connection to the drip.

Clamp: has the function of closing the CVC avoiding the leakage of blood during the change or the removal of the drip.



2. Material used for infusion therapy

<p>Bottle</p> <p>It is the container, usually made of glass or plastic, which contains the solution - liquid that will be administered through the CVC.</p> 	<p>Flow Tube</p> <p>It consists of a long tube that allows the solution to pass from the bottle to the patient's vein. The infusion flow is made up of two other parts: the drip chamber and the clamp or flow regulator.</p> 
<p>Drip chamber</p> <p>It is located in the upper part of the bottle, immediately after the bottle. It allows you to see the liquid going down, helping to understand if the solution is going down correctly and the speed with which it goes down.</p> 	<p>Clamp and flow regulator</p> <p>They are devices (usually small wheels) that serve to regulate the speed of the liquid to be administered. Furthermore, by pushing the clamp wheel down to the bottom it is possible to completely stop the flow of the liquid, for example when the solution is finished and the bottle needs to be changed, preventing the air from entering the tube.</p>  

3. Standard Procedures

☞ **Replace one bottle with another**

When the liquid contained in the bottle is almost finished, when only a few milliliters remain inside, perform the following steps:

- ✓ Wash your hands thoroughly
- ✓ Stop the flow of liquid by lowering the wheel clamp to the bottom or setting the flow regulator off
- ✓ Take the new bottle to be infused
- ✓ Remove the protective tab on the bottle cap (if this has not already been removed by adding drugs) without touching the rubber pad with your fingers
- ✓ Remove the flow tube from the terminated bottle taking care not to touch the part to be inserted into the new bottle
- ✓ Insert the flow tube into the new bottle cap
- ✓ Open again the clamp or set the flow regulator as expected

☞ **Washing of the CVC**

To be carried out at the end of the last infusion of the day

- ✓ Wash your hands thoroughly
- ✓ Wear disposable gloves
- ✓ Close the CVC clamp and then unscrew the infusion flow
- ✓ Disinfect, if present, the connector with a gauze soaked in disinfectant
- ✓ Insert the syringe without needle (containing 10/20 ml of solution prepared by the nurse) and inject according to the "STOP and GO" technique then remove the syringe, after opening the clamp
- ✓ Close the clamp before removing the empty syringe (to prevent blood from returning)

(The technique of STOP and GO consists in injecting the solution in several shots quickly, about 2 cc at a time, creating a vortex inside the CVC that completely wash it)

☞ **Connecting the flow tube to the CVC**

To be done when you need to prepare the first infusion of the day

- ✓ Wash hands thoroughly
- ✓ Wear disposable gloves
- ✓ Insert the apical part of the flow tube into the bottle
- ✓ Open the air cap
- ✓ Let some bottle solution go down inside the drip chamber by pressing the chamber itself
- ✓ Open the clamp wheel
- ✓ Slide the solution contained in the bottle along the whole tube until you see the solution come out
- ✓ Close the clamp wheel
- ✓ Connect the flow tube by the upper part of it to the CVC by applying light pressure and rotating
- ✓ Open again the clamp, adjust the flow through the clamp itself or the flow regulator, if present

☞ Replacement of the flow tube

If the flow tube is defective, dirty (for example, if a blood reflux has occurred) and must be replaced

- ✓ Close the clamp
- ✓ Remove the flow tube from the CVC (if it was already connected)
- ✓ Remove the defective or dirty flow tube and discard it
- ✓ Take a new flow tube
- ✓ Connect the new flow tube according to the procedure described above

4. Technical Problems

A. THE LIQUID IN THE BOTTLE DOES NOT GO DOWN ANYMORE ...

- ☞ **IF** the drops are no longer seen in the dripping chamber
 - ✓ Check that there are no interruptions or bends that prevent flow in the inflat line
 - ✓ Try to change the position of the patient:
 - if it is curled, make it sit or stretch
 - move the arm from the same side where the CVC is positioned
 - let the patient breathe deeply
- ☞ **IF** the drip chamber is full of solution
 - ✓ Close the clamp
 - ✓ Squeeze the drip chamber inverted
 - ✓ Open again the clamp

IF THERE IS NO RESUMPTION OF THE FLOW...

- ✓ Suspend the administration of the infusion
- ✓ Disconnect the flow tube from the bottle
- ✓ Perform the washes as planned
- ✓ Reconnect the flow tube to the CVC
- ✓ Open the infusion clamp and check for flow recovery

In case the problem continues to be present:

- ✓ Suspend the administration of the infusion
- ✓ Disconnect the flow tube from the CVC
- ✓ Contact the Nursing Service

B. PRESENCE OF AIR IN THE FLOW TUBE

- ☞ **IF** the liquid inside the infusion has dropped completely, and therefore the air has entered, we do not have to worry because the drip stops automatically and therefore the air cannot enter into the vein (so in the blood)
 - ✓ Close the clamp
 - ✓ Disconnect the flow tube from the CVC
 - ✓ Replace the infusion according to the procedure described on page 5

- ☞ **If** there are no other bottles to put:
 - ✓ Follow the procedure described on page 5, “*Washing of the CVC*”
- ☞ **If** there are other bottles to be put:
 - ✓ Follow the procedure described on page 5, “*Replace one bottle with another*”
- ☞ **If** air is present along the whole infusion but the infusion is still not finished:
 - ✓ Immediately close the clamp
 - ✓ Disconnect the tube from the CVC
 - ✓ Replace the infusion according to the procedure described on page 5

C. THE CANNULA NEEDLE DRESSING BEGINS TO BE WET OR DIRTY WITH BLOOD

- ✓ Wash hands thoroughly
- ✓ Wear disposable gloves
- ✓ Suspend the administration of the drip
- ✓ Disconnect the infusion
- ✓ Contact the Nursing Service

D. APPEARANCE OF BLOOD INTO THE FLOW TUBE

It is a blood reflux, so check that the drip is not at a lower level than the patient, in this case raise the drip to a higher level.

- ☞ **If** it consist in a short section of blood reflux, there is nothing to do, only to check that blood is slowly lightening.
- ☞ **If** blood has flowed through the entire length of the flow tube or a large part of it, replace the infusion according to the procedure described on page 6
- ☞ **If** the solution does not go down anymore:
 - ✓ Suspend the administration of the drip
 - ✓ Disconnect the infusion
 - ✓ Perform a washing
 - ✓ Contact the Nursing Service

E. DISCONNECTION OF THE FLOW TUBE FROM THE CVC

In case the flow tube is accidentally disconnected from the CVC, for example due to traction:

- ✓ Check that the CVC has not come out from its place or has been connected to the flow tube
- ✓ Contact immediately the Nursing Service

F. SPILL OF THE INFUSED SOLUTION

- ☞ **If** it escapes from the CVC itself:
it is an indication of cracking or damage to the CVC itself.
 - ✓ Stop the infusion
 - ✓ Close the CVC clamp
 - ✓ Contact the Nursing Service

- ☞ **IF** it comes out of the flow tube:
- ✓ Check the connection between the flow tube and the CVC
 - ✓ Check the integrity of the flow tube

 - IF the flow tube is not intact:
 - ✓ Replace the flow tube according to the procedure described.
 - IF the flow tube is intact:
 - ✓ Stop the infusion
 - ✓ Contact the Nursing Service

G. IT IS NOT POSSIBLE TO WASH THE CVC

If performing the wash, the solution cannot be introduced because there is strong resistance:

- ✓ Do not force
- ✓ Contact the Nursing Service

5. Clinical Problems

List of some signs and symptoms that may occur.

If you notice any of these signs - symptoms during the therapy stop it immediately and, in any case, report it promptly to the Nursing Service.

- ✓ Burning
- ✓ Reddening
- ✓ Swelling
- ✓ Pus
- ✓ Arm pain corresponding to the position of the CVC
- ✓ Swelling of the arm corresponding to the position of the CVC

Pay particular attention to:

- ✓ Appearance of fever, during or concurrently with the therapy
- ✓ Appearance of shivers, during or concurrently with the therapy
- ✓ Sense of suffocation or itching, during or concurrently with therapy

They could indicate a possible infection or an allergic reaction.

In this case:

- ✓ Immediately suspend the infusion \ therapy
- ✓ Promptly contact the Nursing Service.

6. Contraindications

What should not be done:

☞ Under no circumstances do the following things:

- ✓ Scratch near or at the location where the CVC is located
- ✓ Put in tension, crush, knot, tie the tube of the flow tube
- ✓ Use sharp material near the CVC, such as razors
- ✓ Use solvents or degreasers to remove plaster marks
- ✓ Use dirty / contaminated materials or materials already used in washing and / or dressing, such as syringes, caps, etc.
- ✓ Place the drip under the patient level, for example on the floor
- ✓ Do not discover or leave the CVC site uncovered
- ✓ Do not remove / cut the CVC fixing points
- ✓ Do not wet the seat of the CVC, in case of shower or wash, protect it as indicated by the nursing staff
- ✓ Do not attempt to reinsert the CVC in case it accidentally comes out, even partially

NB: Under no circumstances should you take personal initiatives without first consulting the Nursing Service.

Contacts

Nursing Service - telephone numbers:

1. _____

2. _____



From _____ to _____

In other hours contact _____

In case of emergency contact _____



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