4 導尿管護理的方式

定義

預防病人因導尿管留置而發生逆行性感染，規範護理人員應執行的導尿口護理及導尿管固定等相關護理措施。

建議

建議 (Grades of Recommendation)

A 不建議使用優碘或抗生素藥膏執行尿道口護理，此法無法降低泌尿道感染。

B 除非導尿管阻塞，否則不建議使用生理食鹽水或抗菌溶液常規地執行膀胱灌洗。

C 建議適當地固定導尿管，避免導尿管的牽扯造成尿道的傷害。

前言

泌尿道感染 (UTI) 為最常見之院內感染，佔所有院內感染的 30 ～ 40%，其中約有 90% 與導尿管留置有關 (Piechota & Pannek, 2003)。預防與留置導尿管有關之泌尿道感染，最好的方法就是儘早移除導尿管 (Nicolle, 2005) 和維持密閉性系統 (Tenke, Kovacs, Johansen, Matsumoto, Tambyah & Naber, 2007)。留置導尿管病人即使是維持密閉性系統，在 10 ～ 14 天仍有 50% 的機會發生菌尿症；放置 30 天後絕大多數病人都發生菌尿症 (Sweet *et al.*, 1985)。因此受限於病情因素必須留置導尿管的病人，能獲得適當的導尿管照護則顯得相當重要。

文獻回顧

4.1 尿道口護理 (Meatal Care) 的方式

尿道口護理是一項預防留置導尿管病人泌尿道感染的技巧，依據美國疾病管制局 CDC(1981) 及 Gray(2004) 建議，留置導尿管病人需執行常規尿道口護理。臨床研究顯示，一天二次使用含優碘溶液清潔並塗抹優碘藥膏，與一天一次使用肥皂清水清潔，兩者在降低菌尿症之成效並無明顯差異 (Webster *et al.*, 2001；Gray, 2004)。美國疾病管制中心 (1981) 及許多臨床研究顯示上述兩種方式均無法證實可有效降低與長期留置導尿管相關之尿路感染，但使用優碘或抗生素藥膏是有害的 (Gray, 2004；Leone *et al.*, 2004)。

尿道口清潔應首重在正確技術，女性清潔應由前 (會陰部) 到後 (肛門)，以避免細菌由肛門部擴散到會陰部 (Newman, 2007)。雖然每天一次或二次使用碘酒或肥皂水做導尿管的消毒清潔並不會降低泌尿道感染，但為了保持病人插管部位之清潔，並考量成本的觀點，建議每日以肥皂和清水的清潔方式清除導尿管聚積的不潔分泌物 (Wood & Bender, 1989；Leone *et al.*, 2004) 。

護理人員及照顧者在每次執行導尿口護理前後立即洗手，能達到減少交叉感染機會，有助於預防泌尿道感染 (Gray, 2004；Marc *et al.*, 2004)。

4.2 尿管的固定／尿袋的位置

Gray (2004) 提出使用固定性好的膠帶固定導尿管，除了預防尿管滑脫，同時可防止牽扯滑動而致細菌進入膀胱的機率，對於留置導尿管之病人應注意觀察導尿管是否有鬆動或拉扯之情形。妥當固定可避免病人因導尿管移動或拉扯造成尿道傷害，增加病人的舒適感，但對降低尿路感染成效並未具統計上意義。

建議女性病人的留置導尿管應固定於大腿內側上方，男性病人宜固定於下腹股溝之上方以防陰莖與陰囊接觸點形成皮下瘻管。尿袋應保持在膀胱以下，以免導致尿液回流 (CDC, 1981)。

4.3 如何預防尿管阻塞

Wiled & Carrigan (2003) 指出，導尿管引流受阻及低尿流量會增加泌尿道感染的機率。長期留置導尿管的病人預防導尿管阻塞最重要的方法，就是攝取足夠的水分，讓尿液呈現淡黃或變清澈。臨床上有些醫師認為當增加液體攝取或是酸化尿液等方法都無法改善導尿管經常阻塞時，可使用 0.25% 稀釋的醋酸來灌洗膀胱 (Ken *et al.*, 2006)。

使用矽質導尿管比一般乳膠 (latex) 較少發生阻塞情形，因此建議長期留置導尿最好選擇矽質導尿管 (Tenke *et al.*, 2007)。有學者建議應持續監測導尿管阻塞的情形，已阻塞之導尿管應在 4 ～ 8 小時內被更換 (Wood & Bender, 1989)。除非病情需要，應避免定期使用生理食鹽水、稀釋醋酸、碘酒、過氧化氫或抗生素作膀胱灌洗，如此並不能降低與導尿管相關尿路感染的發生，而可能會導致更嚴重的生物抗體產生或細菌的繁殖與感染 (Schneeberger *et al.*, 1992；Sweet *et al.*, 1985；Ken *et al.*, 2006)。

結論

綜合以上所論，對於導尿管護理臨床執行上的指引建議為：避免不必要的導尿管留置，護理人員應具有正確的導尿管護理知識並確實洗手，確實執行會陰沖洗，尿道口護理可用肥皂和清水清除導尿管聚積的分泌物，保持尿液引流順暢，除非要排除導尿管阻塞，否則應避免膀胱沖洗，導尿管要適當固定，尿袋應保持在膀胱下，以免導致尿液回流。

證據等級列表

年代	作者	個案數	措施	結果	證據等級	文獻來源
2008	Tenke P, Kovacs B, Bjerklund Johansen T. E., Matsumoto T., Tambyah P.A., Naber K. G.		guidelines on management and prevention of catheter-associated urinary tract infections.	The survery recommendation cather system should remain closed and the duration of catheterization should be minimal.	1	International Journal of Antimicrobial Agents, 31(1), 68–78.
2007	Newman, D.K		1. Catheter design 2. Drainage System 3. Catheter Securement Nonadhesive Catheter Securement Devices 4. Adhesive Catheter	As the population ages, bladder disorders will become more prevalent and indwelling urinary catheter use will increase. Nurses are the key to the assessment of appropriateness of continuing indwelling catheter use, identifying complications, and implementing care practices to minimize complications.	—	Journal Wound Ostomy Continence Nursing, 34(6), 655-661.

年代	作者	個案數	措施	結果	證據等級	文獻來源
2006	Ken,B.W.,Kay,C. C.,James,F. R.,Susan,M. C.,Yuying,C	89	Randomized, double-blind, comparison of twice daily bladder irrigation using 3 different solution (1.sterile saline, 2.acetic acid,3.neomycin-polymyxinsolution.) for 8 weeks with neurogenic bladder patient.	1. None of the 3 irrigant had a detectable effect. 2. A signification increase in urinary PH in all 3 group. 3. No signification development of resistance to oral antimicrobials beyond what was observed at baseline was detected	1	Journal Spinal Cord Medical, 29(3), 217-226.
2005	Nicolle, L.E.	—	Prevention of infection on long-tern indwelling catheters.	1. Daily meatal care with any antiseptic or soap and water are not effective in decreased infection. 2. Maintaining a closed drainage system. 3. Avoiding catheter blockage twisting or trauma.	2+	Drugs & Aging, 22(8), 627-639.

年代	作者	個案數	措施	結果	證據等級	文獻來源
2004	Gray, M	—	To identify nursing interventions believed to prevent catheter associated UTI, a systematic search of healthcare literature was undertaken using the key words "indwelling catheter," "urinary catheterization," "urinary tract infection," "guidelines," "clinical practice guidelines," and "best practice." MEDLINE, CINAHL, and the Cochrane Database for Systematic Reviews were reviewed from January 1996 to November 2003.	1. selection of the smallest feasible catheter, when worn long-term, its influence on UTI risk remains unknown. 2. Clean technique should be employed when inserting an indwelling catheter. 3. The perineal area should be regularly cleaned regularly with water and an appropriate cleanser. 4. Maintenance of a closed catheter drainage system reduces UTI risk in the patient with a short-term indwelling catheter. This strategy has not proved feasible for patients managed by long-term indwelling catheters.	1-3	Journal Wound Ostomy Continence Nursing, 31(1),3-13.

年代	作者	個案數	措施	結果	證據等級	文獻來源
				5. Routine irrigation does not reduce UTI risk. 6. Routine catheter change schedules should avoid extreme frequency or infrequency. 7. Placement of antiseptic solutions does not reduce UTI risk. 8. Placement of patients with catheter-associated UTI in a room from those with an indwelling catheter and no infection may reduce the risk of spread within a single facility by encouraging hand washing between care encounters.		

年代	作者	個案數	措施	結果	證據等級	文獻來源
				9. Quality improvement programs that include providing feedback to staff concerning nosocomial catheter-associated UTI rates and education concerning the insertion and management of indwelling catheters may reduce UTI incidence.		
2004	Leone.M.,Garnier,F.,Avidan,M.,Martin,C		This review is to analyze literature concerning the diagnosis, prevention, and management of catheter-associated urinary tract infection (CAUTI) occurring in patients hospitalized in the intensive care unit (ICU).	The prevention of CAUTI in ICU patients does not require expensive devices. Neither complex closed drainage systems nor silver-coated urinary catheters have demonstrated efficacy in comparative randomized clinical trials.	B-D	Microbes and Infection, 6(11), 1026-1032

年代	作者	個案數	措施	結果	證據等級	文獻來源
				Bladder irrigation should not be used, except when an obstruction of the catheter is highly likely. The administration of prophylactic antimicrobial therapy, although effective in reducing the incidence of urinary bacteria, cannot be recommended in ICU patients.		
2004	Marc Leone, Franck Garnier, Michael Avidan & Claude Martin	—	analyze literature concerning the diagnosis, prevention, and management of catheter-associated urinary tract infection (CAUTI) occurring in patients hospitalized in the intensive care unit (ICU).	The significance of asymptomatic bacteriuria has to be correctly assessed. Bacteria in the bladder constitute a reservoir for the development of multiresistant strains, and the rate of bacteriuria could be used as a marker of the level of ICU care.	1	Microbes and Infection Volume 6, Issue 11, September 2004, Pages 1026-1032

年代	作者	個案數	措施	結果	證據等級	文獻來源
2003	Piechota H.J& Pannek J	—	Review of the urinary tract infection	Prevention urinary tract infection focus on practical aspect and hygiene.	2+	Der Urologe (Ausg. A), 42, 1060-1069.
2001	Webster, J., Hood, R.H., Burridge, C.A., Doidge, M.L., Admin P. B., & George, N.	436	Obstetric patients who required urinary catheterization as part of their routine care were randomly assigned to either the "water" or "chlorhexidine" group with a sealed envelope. A sterile specimen of urine was collected 24 hours after insertion of the catheter.	The practice of periurethral cleaning with an antiseptic did not decrease the rate of bacteria in this population and is probably not useful.	1	America Journal infection Control, 29(6), 389-394.
1992	Schneeberger PM, Vreede RW, Bogdanowicz JF, van Dijk WC.	264	Bladder irrigation with povidone-iodine before Catheter removal.	povidone-iodine bladder irrigation had no beneficial effect on the occurrence of bacteriuria.	1	The Journal of Hospital Infection.,21(3), 223-229.

年代	作者	個案數	措施	結果	證據等級	文獻來源
1989	Wood DR, Bender BS.	—	Review long-term urinary tract catheterization in nursing home.	Routine care of the catheter is challenge. Recommendation meatal care should be simple soap and water cleansing of area to remove accumulated debris. Meatal antibiotic are not effrctive.	2+	The medical Clinics North America, 73(6), 1441-54.
1985	Sweet DE, Goodpasture HC, Holl K, Smart S, Alexander H, Hedari A.	134	Randomized controlled,H2O2 into the drainage bag for 5day or more.	H2O2 into the drainage bag did not decrease the rate of bacteriuria or UTI..	1-	Infect Control, 6(7), 263-266.
1981	CDC		Guideline for the Prevention of Catheter-associated Urinary Tract Infections	1. Educate personnel in correct techniques of catheter insertion and care. 2. Catheterize only when necessary. 3. Emphasize handwashing. 4. Insert catheter using aseptic technique and sterile equipment.	1	CDC, 1981

年代	作者	個案數	措施	結果	證據等級	文獻來源
				5. Secure catheter properly. 6. Maintain closed sterile drainage. 7. Obtain urine samples aseptically. 8. Maintain unobstructed urine flow. 9. Periodically re-educate personnel in catheter care. 10. Use smallest suitable bore catheter. 11. Avoid irrigation unless needed to prevent or relieve obstruction. 12. Refrain from daily meatal care with either of the regimens discussed in text. 13. Do not change catheters at arbitrary fixed intervals.		

年代	作者	個案數	措施	結果	證據等級	文獻來源
				14. Consider alternative techniques of urinary drainage before using an indwelling urethral catheter. 15. Replace the collecting system when sterile closed drainage has been violated. 16. Spatially separate infected and uninfected patients with indwelling catheters. 17. Avoid routine bacteriologic monitoring.		

參考文獻

Centers for Disease Control and Prevention(CDC)(1981). *Guideline for the Prevention of Catheter-associated Urinary Tract Infections. Published.*

Gray, M. (2004). What Nursing Interventions Reduce the Risk of Symptomatic Urinary Tract Infection in the Patient With an Indwelling Catheter? The Journal of Wound Ostomy & Continence Nursing, 31(1), 3-13.

Ken, B. W., Kay, C .C., MSN, C., James, F. R., Susan, M. C., MSN, C.,& Yuying, C. 2006).Evaluation of 3 methods of bladder irrigation to treat bacteriuria in ersons with neurogenic bladder. *Journal Spinal Cord Medical*, 29(3),217-226.

Leone, M., Garnier, F., Avidan, M.,&Martin, C. (2004). Catheter-associated Urinary Tract Infections in intensive care units. *Microbes and Infection*, 6(11), 1026-1032.

Newman, D. K. (2007). The Indwelling Urinary Catheter: Principles for Best Practice. Journal of Wound Ostomy Continence Nursing, 34(6), 655-661.

Nicolle, L. E. (2005). Catheter-related urinary tract infection. *Drugs & Aging*, 22(8), 627-639.

Piechota, H. J., & Pannek, J.(2003).Catheter drainage of the urinary tract. Status of the technology and perospectives. *Der Urologe*. (Ausg.A), 42, 1060-1069.

Schneeberger, P. M., Vreede, R. W., Bogdanowicz, J. F., &Dijk, W. C. (1992). A randomized study on the effect of bladder irrigation with povidone-iodine before removal of an indwelling catheter. *The Journal of Hospital Infection*, 21(3), 223-229.

Goodpasture, H.C., Holl, K.S.,&Alexander, S.H. (1985). Evaluation of H_2O_2 rophylaxis of bacteriuria in patients with long-term indwelling Foley catheters: randomized controlled study.Infect Control, 6(7), 263-266.

Tenke, P., Kovacs, B., Bjerklund Johansen, T. E., Matsumoto, T., Tambyah, P. A.,&Naber, K. G. (2008). European and Asian guidelines on management and prevention of catheter-associated urinary tract infections. International *Journal of Antimicrobial Agents*, 31(1), 68–78.

Wilde, M. H., & Carrigan, M. J. (2003). A chart audit of factors related to urine flow and urinary tract infection. *Journal of Advanced Nursing*, 43, 254-262.

Wood, D. R., & Bender, B. S. (1989). Long-term urinary tract catheterization. *The medical Clinics of North America*, 73(6), 1441-1454.

Webster, J., Hood, R. H., Burridge, C. A., Doidge, M. L., Philips, K. M., & George, N. (2001). Water or antiseptic for periurethral cleaning before urinary catheterization: A randomized controlled trail. *America Journal Infection Control*, 29(6), 389-394.

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