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OBJECTIVELY IMPROVING APPROPRIATENESS OF PADS PRESCRIPTION TO PATIENTS WITH URINARY INCONTINENCE: A PAD TEST-BASED STUDY

Hypothesis / aims of study

People with urinary incontinence (UI) not suitable for effective treatment or that choose management over attempted cure, need to use some kind of continence product to control or contain leakage of urine so as to achieve a social continence. Selecting suitable continence products is critical for the well-being and quality of life of patients and care-givers. The choice of appropriate products for an individual with UI is influenced by the resources and care available and patient / carer preference, as well as assessment of specific client characteristics and needs. Often the main measure by which the success of products is judged is their ability to conceal the problem. Such concealment may lead to the use of products with a larger capacity and greater bulkiness than strictly necessary but this can in itself introduce issues to do with discretion, comfort and skin health, and last but not least impact on total health expenditure for patient management (Healthy Institutes and/or care givers). It has been reported in a previous small study that a proportion of patients are provided with inappropriate products that exceed or fall short of the absorption capacity they require [1].

A careful patient assessment is an important part of the process of product selection and the severity of leakage is a key aspect of this assessment. Working out how much a patient leaks can help to prescribe the most appropriate products [1]. However, subjective people's perception about how much they leak vary widely. Also the number of pads used per day has been found not to be a good measure of degree of UI [2]. On the other hands, pad test is a reliable and reproducible method for the objective measure of UI [3].

We aimed to measure objectively the severity of UI in a large cohort of patients in order to evaluate the appropriateness of pads used and to adapt the type of pad to their leakage volumes.

Study design, materials and methods

A cross-sectional study was designed. Three geographic areas of the North, Center and South of Italy were involved. Patients suffering from UI and receiving pads in these areas were included from 01/2012 to 03/2016. All patients volunteered to perform a 48-hour pad test in their usual home environment and to fill in a diary with detailed information on their pad usage (brand, model and size of the product(s), wearing time, dry and wet weight, main activity performed). At visit 1, patients were given written instructions on how to complete the pad test. Patients were to begin the pad test on the days before the scheduled visit 2 (visit to get appropriate product). Patients had to perform usual daily activity and use their usual pads. Demographic, anthropometric and clinical characteristics of the patients were collected. At visit 2, the diary has been analysed by nurses or specialized operators, and the type of used product, wearing time, dry and wet weight of each pad, activity mainly done during pad wearing (specific for each pad change) and amount of urine released in 48 hours has been recorded.

The pad usage was defined as appropriate if the maximum absorbent capacity (MAC) of the product was from 30% (LL-Lower Limit) to 50% (UL-Upper Limit) higher than the real urine leakage volume recorded. The pad was defined as borderline when its MAC was ± 50ml from the LL and UL described above. The pad was defined as inappropriate when its MAC is: a) higher than UL+50ml and b) lower that LL+50ml. This definition of the prescription appropriateness has been based on type of product used in the study and level of MAC.

Results

The study included 14,493 subjects (mean age 78 years, range 5-104; 26% males, 74% females) using overall during the study days 98,362 pads. Seventy-eight percent of patients was ambulatory and 22% was bedridden. Ninety-six percent of the patients were at home and the remaining 4 % at Nursing Home. The mean number of 48 hours pad used was 6,8 (SD 2.7). The mean net pad weight was 290 g (SD 243) (344 ±256 g in males, 276 ±240 g in females) with 8,575 (59%) subjects reporting a urine weight per pad ≤300 gr and 30% ≤150 gr. The mean net pad weight was influenced by the level of mobility (higher in bedridden patients compared to ambulatory patients; p= 0,001), age (people aged over 70 years old had a mean net pad weights higher than those below 70 years old; p=0,0001) and gender (higher in males comared to females; p=0.0001). Night-time mean net pad weight was higher than daytime pad weight (p=0.0001). The mean wearing time was 5.5 hours (SD 3.1), longer in the night-time (6.7 hours (SD 3.1) compared to the daytime (5.1 hours, SD 3.0). The mean net 48-hours pad weight was 1,966g (SD 1,569) (2,216 ± 1,639g in males, 1,906 ± 1,568g in females).

The table 1 displays the proportions of patients using different types of product. Products have been clustered based on related urine incontinence range. Fifty percent of patients (7,262) was found to use inappropriate pads and nine percent (1,298) borderline pads. The use of brief products diapers was higher among men than in females (70% vs. 43%, p= 0.0001).

Interpretation of results

The majority of patients was not using the appropriate absorbent product based on its actual leakage volumes and often they wear pads too small or, more frequently, too large and consequently too uncomfortable and occlusive.

Concluding message

An accurate and objective assessment of the severity of UI can help to prescribe a well-fitted absorbent product in order to improve patients' quality of life and satisfaction. The 48-hour pad test provides accurate measurement of urine loss and can be used by prescriber team/specialists to improve the appropriateness of pads prescription. UI is often a long-term condition and so monitoring and periodic reassessment is essential to maintain effective management with products.

Table 1. Pads use and prescription appropriateness.				
URINE INCONTINENCE LEVEL	**LIGHT**	**MODERATE**	**SEVERE**	**VERY SEVERE**
Urine leakage range[1]	Up to 200 g/pad	From 200 to 350 g/pad	From 350 to 500 g/pad	>500 g/pad
Products appropriate for urine leakage range	Liners/pads for light incontinence Shaped Minimo P4 Rectangular with poly backsheet Rectangular w/o poly backsheet	Pads for moderate incontinence Shaped Plus P6	Shaped Extra P7 Shaped Super P8 Brief Small Super Brief Medium Super Brief Extra Large Classic	Shaped Maxi P9 Brief Large Super Brief Large Maxi Brief Medium Maxi Brief XL Maxi
Total patients using products above[2] n(%)	**4,731 (33)**	**637 (4)**	**1,802 (12)**	**6,801 (47)**
Patients using APPROPRIATE pad based on urine leakage range n(%)	3,154 (67)	133 (21)	344 (19)	1,780 (26)
Patients using NOT APPROPRIATE IN EXCESS pad based on urine leakage range n(%)	n.a[3]	380 (60)	993 (55)	4,607 (68)
Patients using NOT APPROPRIATE IN DEFECT pad based on urine leakage range n(%)	1,035 (22)	37 (6)	210 (12)	n.a. [4]
Patients using BORDERLINE IN EXCESS pad based on urine leakage range n(%)	n.a. [3]	66 (10)	180 (10)	414 (6)
Patients using BORDER LINE IN DEFECT pad based on urine leakage range n(%)	542 (11)	21 (3)	75 (4)	n.a. [4]
ESTIMATE OF APPROPRIATE PRESCRIPTION				
Total patients that should have used products above n(%)	**5,388 (37)**	**4,125 (28)**	**2,200 (15)**	**2,258 (16)**
Difference vs. real usage n(%)	**+657 (+5)**	**+3,488 (+24)**	**+398 (+3)**	**-4,543 (-31)**

Notes
(1)The urine leakage range is the minimum and maximum average urine leakage associated to each incontinence level.
(2) Ninety-six percent of the total base (14,493) is included. The remaining 4% was using product not clearly belonging to any incontinence level.
(3) This measure is not applicable (n.a.) because it should imply a urine leakage amount equal to zero, thus not incontinent.
(4) This measure is not applicable (n.a.) because products of this incontinence level have MAC 30% higher than 1,000g (that is the maximum loading recorded in pad test).

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