



# The Renal Pharmacist

Volume 7, Issue 2

Summer 2005

## Chair:

Jenny Ng  
Sunnybrook & Women's College  
Health Science Centre  
PH: (416) 480-6100 ext 3853  
jenny.ng@sw.ca

## Vice Chair:

Marisa Battistella  
University Health Network  
Currently on maternity leave

## Secretary/Treasurer:

Julie Scott  
Grand River Hospital  
PH: (519) 749-4300 ext 5333  
julie.scott@grhosp.on.ca

## Education Coordinators:

Roza Berkowitz  
Credit Valley Hospital  
PH: (905) 813-1614 ext 6352  
rberkowitz@cvh.on.ca  
Jennifer Brick  
Grand River Hospital  
PH: (519) 749-4300 ext 2465  
jennifer.brick@grhosp.on.ca

## Communications Coordinators:

Lisa Sever  
York Central Hospital  
PH: (905) 883-1212 ext 3833  
lsever@yorkcentral.on.ca  
Reshma Rathod  
Lakeridge Health Centre  
PH: (905) 576-8711 ext 3502  
rrathod@lakeridgehealth.on.ca

## Website Coordinator:

Brenda Bruinooge  
York Central Hospital  
PH: (905) 883-1212 ext 3833  
bbruinooge@yorkcentral.on.ca

## Past Chair:

Andrea Fox  
Sunnybrook & Women's College  
Health Science Centre  
PH: (416) 480-6100 ext 7750  
andrea.fox@sw.ca

## ADDRESS/INFO CHANGES

Please forward any address / phone number changes to the Secretary / Treasurer. Her e-mail is [julie.scott@grhosp.on.ca](mailto:julie.scott@grhosp.on.ca). We are constantly updating our membership mailing list. Thank you.

## View from the Chair

Summer is finally here and the RPN executive have been busy over the winter season preparing the 2005 CE events. In February we had Dr. Karen Shalansky come to the CSHP PPC conference to give us an excellent presentation on the MDRD (Modification of Diet and Renal Disease) and how it compares to the Cockcroft-Gault GFR estimation. On May 5th, Dr. Sophie Jamal provided us with an enlightening presentation on fractures in dialysis patients. We are looking forward to continuing the educational series with Dr. Wendy Lim speaking to us on low-molecular weight heparins in CKD in the Fall and CANNT 2005 in Halifax.

Recently we were made aware of the U.S. Centers for Medicare & Medicaid Services (CMS) publishing revisions to the Conditions of Coverage for End Stage Renal Disease Facilities. This document details the requirements that must be met by dialysis facilities in the U.S. in order to receive reimbursement from Medicare. I wanted to highlight the section within this document which discusses the role of a consultant pharmacist in the dialysis unit (<http://www.cms.hhs.gov/providerupdate/regs/cms3818p.pdf> – page 42). The CMS acknowledged the complex medication regimens of a dialysis patient, and includes in their document that medication review be part of the regular patient assessment. Despite recognizing literature demonstrating cost-effectiveness of having a pharmacist within the dialysis unit, there were no specific recommendations made on the requirement of pharmaceutical services. The CMS did, however, invite comments regarding the role of the pharmacist. The Nephrology Pharmacists Associates (NPA) were seeking a national response in support of requiring a consultant pharmacist in dialysis facilities. The RPN responded with a letter from a Canadian perspective to the CMS. We shared our positive experience in Canada of having clinical pharmacists affiliated with most dialysis units. Our letter emphasized the strong impact of a nephrology pharmacist on the quality of care delivered to ESRD patients. The importance of having a pharmacist as part of the multi-disciplinary team to ensure accuracy and safety of medications for our patients was also stressed. Hopefully there will be a strong enough response to the call for comments that the CMS will include a consultant pharmacist as a member of the multi-disciplinary team in U.S. dialysis units in the near future. We wish the NPA much success in their endeavor!

Jenny Ng  
Chair, Renal Pharmacist Network

## IN THIS ISSUE ...

Cost of Living for Hemodialysis Patients Living in Durham.....	2/3
MDRD to Assess Renal Function: How Does it Compare? .....	4/5/6
Member Profile .....	7
What's That Smell? .....	7
Website Update .....	7
New Websites .....	7
Articles of Interest /Conferences / Elections .....	8

# The Cost of Living for Hemodialysis Patients in the Durham Region

*Submitted by Hilary Jennings, Renal Pharmacist, Lakeridge Health Corp., Whitby ON*

---

As a relative newcomer to the field of renal pharmacy, I am amazed at the number of patients concerned about out-of-pocket costs associated with hemodialysis. Our program will supply medications to patients temporarily on a compassionate basis. In most cases, the prices of medications do not seem high, however when compared to the patient's monthly disposable income the cost may be prohibitive. The following chart outlines some of the major costs associated with hemodialysis. The individuals are fictional but represent typical patients seen in our centre. Note that the resultant disposable income must cover all incidentals which have not been taken into account in the chart.

## **Sources of income:**

A low income senior is an individual with a yearly income less than \$16018 or a couple with a yearly income less than \$24175. The ODSP full entitlement is \$930/month/ individual and \$1417/month/ couple. A single person can earn up to \$160/month at a job and keep their full ODSP cheque.

## **Medication costs:**

Trillium deductibles were obtained from the Trillium Drug Program Guide. Co-pay costs are based on an average of ten prescriptions filled 4 times per year. The co-pay is \$2 for low income seniors and individuals on ODSP and \$6.11 for high income seniors. Calcium costs are based on a dose of 1000 mg TIDCC and an OTC cost of \$10.99 for 200 tablets. Replavite cost

is based on a dose of 1 tablet daily and an OTC cost of \$9.99 for 100 tablets. The cost of quinine sulfate is based on a dose of 300mg daily and the Shoppers Drug Mart prescription cost of \$51.48 for 90 capsules (quinine is not covered by ODB).

## **Housing**

Market rent varies widely throughout the region (estimate given in chart). Individuals who are employed or who receive a pension may qualify for subsidized housing which usually calculated based on ~30% of their income. Subsidized housing is available to individuals receiving ODSP and is calculated based on a sliding scale (estimate given in chart). There is a shortage of subsidized housing in the Durham region which is undoubtedly the case in most regions.

## **Nutrition**

The cost of Ensure Plus or Resource Fruit Beverage is calculated based on a need for 2 units/day with an estimated cost of \$100/month (prices may vary). Individuals on ODSP may qualify for additional subsidies to help pay for the cost of supplements (\$25-60/month). The cost of food listed in the chart is based on figures from the Durham Region Health Department, Nutritious Food Basket Project. Note that food costs for individuals with kidney disease are often higher due to the need for high protein foods.

## The Cost of Living on Hemodialysis in the Durham Region

	Individual # 1 - Trillium Drug Plan/Couple		Individual # 2 - Trillium Drug Plan/ Single		Individual # 3 - ODB/ High Income Senior/ Couple		Individual # 4 - ODB/ Low Income senior/Single		Individual # 5 - Maximum ODSP/No additional Income/Single	
	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly
<b>Net income</b>	47200	3933.33	27100	2258.33	50000	4166.67	15000	1250	11160	930
<b>Drug Costs</b>										
Deductible	1626	135.50	826	68.83	100	8.33	0	0	0	0
Co-pay	80	6.67	80	6.67	244.4	20.37	80	6.67	80	6.67
Calcium	118.8	9.9	118.8	9.9	118.8	9.9	118.8	9.9	118.8	9.9
Replavite	35.88	2.99	35.88	2.99	35.88	2.99	35.88	2.99	35.88	2.99
Quinine	205.92	17.16			205.92	17.16				
Car (lease + gas)	4800	400	4800	400						
Parking	420	35	420	35	420	35				
Community care					1296	108				
Handtrans (local)							1008	84	1008	84
<b>Costs</b>										
Market rent	12000	1000			12000	1000			12000	1000
Subsidised Housing			8490	707.5			4860	405		
Resource fruit beverage or Ensure Plus beverage			1200	100			1200	100		
<b>Nutrition</b>										
Food	2743.68	228.64	1529.28	127.44	2743.68	228.64	1529.28	127.44	1529.28	127.44
<b>Total Costs</b>	\$ 22,030.28	\$ 1,835.86	\$ 17,499.96	\$ 1,458.33	\$ 17,164.68	\$ 1,430.39	\$ 9,037.88	\$ 753.16	\$ 14,771.96	\$ 1,231.00
<b>Disposable income for individual or couple = (Net income - Total costs)</b>	\$ 25,169.72	\$ 2,097.48	\$ 9,600.04	\$ 800.00	\$ 32,835.32	\$ 2,736.28	\$ 5,962.12	\$ 496.84	\$ (3,611.96)	\$ (301.00)

	Individual	Couple
<b>Low income senior</b>	< 16018/year	< 24175
<b>ODSP - max</b>	930/ month	1417/month

A single person can earn up to \$160 per month at a job and keep their full ODSP cheque.  
 A family can earn up to \$235 per month at a job and keep their full ODSP cheque.

**Calcium cost is based on a dose of 500 mg TIDCC  
 Quinine cost based on 300 mg three times/week pre-dialysis**

**Co-pay cost based on Average of ten prescriptions filled 4 times per year  
 (2.00\$ for low income seniors, Ontario Works Act, Ontario Disability Assistance Act &  
 6.11\$ /prescription for high income seniors)**

# MDRD to Assess Renal Function: How Does it Compare?

Submitted by Karen Shalansky, Pharm.D., Vancouver General Hospital, Vancouver, BC., April, 2005

## Background

In British Columbia, every time a serum creatinine is ordered, all laboratories automatically calculate an estimated glomerular filtration rate (eGFR) using the abbreviated MDRD equation. The goal is to identify patients with chronic kidney disease (CKD) which is defined as either kidney damage or eGFR < 60mL/minute for > 3 months.<sup>1</sup> Primary care physicians are encouraged to regularly screen high risk populations (i.e. diabetics, elderly, those with a history of hypertension or cardiovascular disease, family history of CKD, and First Nations), determine their underlying cause of CKD and follow clinical practice guidelines created to delay the progression of CKD ([www.healthservices.gov.bc.ca/mlsp/protoguides](http://www.healthservices.gov.bc.ca/mlsp/protoguides)).

## GFR Estimation

To estimate GFR, a substance must be 1) freely filtered by the glomerulus; 2) not be secreted or reabsorbed; and 3) have a constant concentration during the period of measurement.<sup>2</sup> Inulin, administered intravenously, is considered the gold standard marker of GFR. However, the measurement of GFR with inulin is expensive and time-consuming. Isotope markers such as 125I-iothalamate are also fairly accurate, but expensive measures of GFR. A 24-hour creatinine clearance (CrCl) can be used to estimate GFR, but this method requires accurate urine collections, is time-consuming and delays results by 24 hours. Serum creatinine (SCr), while accessible and inexpensive, is not a sufficiently accurate measure upon which to base clinical decisions. SCr is derived from the breakdown of creatine and phosphocreatine in muscle. It is primarily excreted by glomerular filtration but is also 10-15% actively secreted. As renal function declines, more is secreted, leading to a falsely elevated eGFR. SCr may not rise until later stages of kidney disease when greater than 50% loss of kidney function has occurred. There is also an age-related decline in muscle mass and thus, less SCr produced in the elderly.

In order to improve the accuracy of SCr alone in assessing renal function, several formulas have been developed which incorporate various parameters in their formula such as age, weight and SCr. The most common formula used today is the Cockcroft-Gault developed in 1976 (Equation 1).<sup>3</sup> The equation was derived from 249 males with stable kidney function ranging from 11 mL/minute to normal. A correction factor of 0.85 was arbitrarily added for females due to the assumption of a 10-20% difference in relative amounts of fat and muscle in women compared to men.<sup>3</sup> The Cockcroft-Gault equation was validated against 24-hour Cr Cl and was found to have a correlation co-efficient (r) of 0.84 or r<sup>2</sup> of 0.71 (see Table 1 for explanation of r<sup>2</sup>).

## MDRD

In 1999, Levey et al developed the MDRD equation to further improve upon the prediction of GFR from SCr.<sup>4</sup> The equation was derived from 1628 patients enrolled in an earlier study entitled "Modification of Diet in Renal Disease"<sup>5</sup>, thus the abbreviation MDRD. The original study was a multi-centre controlled trial to evaluate the effect of protein restriction and strict BP control on the progression of renal disease. Eligibility for patient inclusion were GFR < 70 mL/minute (mean GFR 39.8 mL/minute) and age < 70 years. The MDRD equation (Equation 2) does not include weight, but does include serum albumin, BUN and an African American factor.<sup>4</sup>

## Comparison of MDRD to Cockcroft-Gault

In the Levey study<sup>4</sup>, the MDRD equation showed better correlation to measured GFR (as determined by 125I-iothalamate) compared to Cockcroft-Gault (r<sup>2</sup> = 0.903 vs 0.842 for Cockcroft-Gault). An abbreviated MDRD equation was developed to allow for an easier assessment of GFR.<sup>6</sup> In the abbreviated MDRD, both BUN and serum albumin are removed from the equation (Equation 3). The accuracy of this formula is still intact with an r<sup>2</sup> of 0.892. Note that in British Columbia, the African American factor is not included in the abbreviated MDRD calculation. Table 3 shows renal function estimates of the MDRD equation compared to Cockcroft-Gault. In general, eGFR using the MDRD formula is slightly lower than Cockcroft-Gault at more normal SCr and in younger patients, and approaches similar values to Cockcroft-Gault as the SCr and age increase.

## Limitations of MDRD

The MDRD equation was developed from a very select population of patients less than 70 years old with varying degrees of CKD. It has not been validated in several populations including those with normal renal function (> 70 mL/minute), IDDM, children (< 18 years), renal transplant patients, pregnancy and low serum albumin. The MDRD was recently assessed in 580 patients with normal renal function (mean GFR 101 mL/minute) and showed poor correlation (r<sup>2</sup> = 0.19) compared to measured GFR with non-radiolabeled iothalamate.<sup>7</sup> The authors created their own quadratic equation with a correction factor for healthy patients. Caution must be exercised when using the MDRD in extremes of age and weight, diseases of skeletal muscle (e.g. paraplegia) and high protein diets. As with all prediction equations based on SCr, a steady state SCr is necessary for accurate assessment of renal function. Certain drugs may interfere with SCr secretion including cimetidine and trimethoprim-sulfamethoxazole. As

## MDRD to Assess Renal Function - *continued*

well, certain conditions (e.g. diabetic ketoacidosis) and drugs (e.g. cefoxitin) may interfere with the SCr assay.

### Is the MDRD Superior to Cockcroft-Gault?

The abbreviated MDRD equation was chosen as the laboratory method to determine GFR in British Columbia due to its non-reliance upon weight, which is often an unknown factor in laboratories, and its more accurate assessment of GFR over the Cockcroft-Gault equation in the study from which it was derived. There are several limitations to the MDRD formula, primarily the limited populations it has been tested in, especially in healthy patients with normal renal function, and the complexity to calculate the formula with just paper and pencil. A few trials have compared the MDRD to Cockcroft-Gault in the elderly<sup>8</sup>, African Americans<sup>9</sup> and transplant patients<sup>10</sup> (Table 1). In the elderly, the MDRD showed very good correlation to measured GFR but did not improve the estimate compared to the Cockcroft-Gault equation. The MDRD more accurately predicted GFR than the Cockcroft-Gault for African Americans, but was not as good for predicting renal function in transplant patients. Wuyts et al found the Cockcroft-Gault to be more precise than the abbreviated MDRD in 80 adult patients with CKD.<sup>11</sup>

### Conclusion

Determination of eGFR using the abbreviated MDRD equation by B.C. laboratories was initiated to raise the awareness of

health care professionals to renal dysfunction. The original intent was to allow primary care physicians to stage CKD and act prospectively to slow its progression to end-stage renal disease and dialysis. In general, eGFR calculations are typically slightly lower with the MDRD compared to Cockcroft-Gault except with extremes of age and/or elevated SCr where the two formulas become more similar. The MDRD has not been evaluated in many populations and may not be applicable in patients with normal renal function or in children. The Cockcroft-Gault equation has stood the test of time with at least 24 studies from 1976-1998 assessing it in various populations against various standards with an r<sup>2</sup> ranging from 0.62-0.88.<sup>13,14</sup> Of note, most drug company dosage adjustment guidelines for renal dysfunction are based on GFR determinations using the Cockcroft-Gault equation. The National Kidney Foundation endorses both the MDRD and Cockcroft-Gault equations with the caveat that while the MDRD is more precise than the Cockcroft-Gault for persons with GFR less than ~ 90mL/minute, it has not been validated in diabetic kidney disease, patients with serious co-morbidities, normal persons or persons older than 70 years of age.<sup>1</sup> It is important to recognize that any equation based on SCr to assess renal function has inherent limitations and is best used as a guide, rather than an absolute, to the level of renal dysfunction.

## EQUATIONS

### Equation 1. Cockcroft-Gault

$$\text{Male: CrCl (mL/min)} = \frac{(.140 - \text{Age}) \times \text{Wt (kg)}}{\text{SCr (umol/l} \times 0.0113) \times 72}$$

Female x 0.85

### Equation 2. MDRD (American Units)

$$\text{Male: eGFR (mL/min/1.73m}^2) = 170 \times \text{SCr (mg/dl)}^{-0.999} \times \text{Age}^{-0.176} \times \text{BUN (mg/dl)}^{-0.17} \\ \times \text{Serum Albumin (g/dl)} \times 1.18 \text{ (African American)}$$

Female: x 0.762

### Equation 3. Abbreviated MDRD (American Units)

$$\text{Male: eGFR (mL/min/1.73m}^2) = 186 \times \text{SCr(mg/dl)}^{-1.154} \times \text{Age}^{-0.203} \times 1.212 \text{ (African American)}$$

Female x 0.742

### To convert Abbreviated MDRD to SI units

$$\text{Male eGFR (mL/min/1.73m}^2) = \exp(5.228 - 1.154 \times \ln(\text{SCr} \times 0.0113) - 0.203 \times \ln(\text{age})) \times 1.212 \text{ (African American)}$$
$$\text{Female eGFR (mL/min/1.73m}^2) = \exp(5.228 - 1.154 \times \ln(\text{SCr} \times 0.0113) - 0.203 \times \ln(\text{age}) - 0.299) \times 1.212 \text{ (African American)}$$

## MDRD to Assess Renal Function - *continued*

### References:

1. Levey AS, Coresh J, Balk E et al. National Kidney Foundation Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification. *Ann Intern Med* 2003;139:147-147.
2. Comstock TJ. Quantification of renal function. In: *Pharmacotherapy*, 5th edition. DiPiro JT, Talbert RL, Yee GC et al (eds). McGraw-Hill;1992:753-769 (chapter 42).
3. Cockcroft D, Gault MH. Prediction of creatinine clearance from serum creatinine. *Nephron* 1976;16:31-41.
4. Levey AS, Bosch JP, Breyer Lewis J et al. A more accurate method to estimate glomerular filtration rate from serum creatinine: A new prediction equation. *Ann Intern Med* 1999;130:461-470.
5. Klahr S, Levey AS, Beck GJ et al. The effects of dietary protein restriction and blood-pressure control on the progression of renal disease. Modification of Diet in Renal Disease Study Group. *N Engl J Med* 1994;330:877-884.
6. Levey AS, Greene T, Kusek JW et al. A simplified equation to predict glomerular filtration rate from serum creatinine. *J Am Soc Neph* 2000;11(Suppl):a155 (abstract).
7. Rule AD, Larson TS, Bergstralh EJ et al. Using serum creatinine to estimate glomerular filtration rate: accuracy in good health and chronic kidney disease. *Ann Intern Med* 2004;141:929-937.
8. Lamb EJ, Webb MC, Simpson DE et al. Estimation of glomerular filtration rate in older patients with chronic renal insufficiency: Is this modification of diet in renal disease formula an improvement? *J Am Geriatr Soc* 2003;51:1012-1017.
9. Lewis J, Agodoa L, Cheek D et al. Comparison of cross-sectional renal function measurements in African Americans with hypertensive nephrosclerosis and of primary formulas to estimate glomerular filtration rate. *Am J Kid Dis* 2001;38:744-753.
10. Bedros FV, Kasiske BL. Estimating glomerular filtration rate from serum creatinine in renal transplant recipients. *J Am Soc Neph* 1998;9:666A (abstract).
11. Wuyts B, Bernard D, Van Den Noortgate N et al. Reevaluation of formulas for predicting creatinine clearance in adults and children, using compensated creatinine methods. *Clin Chem* 2003;29:1011-1014.
12. Hazard Munro B. Correlation. In: *Statistical methods for health care research*, 3rd edition. Hazard Munro B (ed). Lippincott;1997:224-245.
13. Gault MH, Longrich LL, Harnett JD et al. Predicting glomerular function from adjusted serum creatinine. *Nephron* 1992;63:249-256.
14. Spinler SA, Nawarskas JJ, Boyce EG et al. Predictive performance of ten equations for estimating creatinine clearance in cardiac patients. *Ann Pharmacother* 1998;32:1275-1283.

### Table 1. Comparison of Formulas

Author	N	Standard Measure of GFR	Correlation (r <sup>2</sup> ) <sup>a</sup>	
			MDRD	Cockcroft-Gault
Cockcroft-Gault 1976 <sup>3</sup>	236 males	24-hr CrCl	–	0.71
Levey et al 1999 <sup>4</sup> (MDRD)	1629 patients with renal dysfunction (age < 70 yrs)	<sup>125</sup> I-iothalamate	0.90	0.84
Lamb et al 2003 <sup>8</sup>	52 elderly (69-92 yrs)	<sup>51</sup> Cr-EDTA	0.84	0.84
Lewis et al 2001 <sup>9</sup>	1703 African Americans	<sup>125</sup> I-iothalamate	0.81	0.72
Bedros et al 1998 <sup>10</sup>	?No. transplant patients	<sup>448</sup> Iohexol	0.59	0.62
Wuyts B et al 2003 <sup>11</sup>	80 patients (51-81 yrs) (median CrCl 43mL/min)	<sup>51</sup> Cr-EDTA	0.66-0.74 <sup>b</sup> (abbrev)	0.76-0.81 <sup>b</sup>

<sup>a</sup>r = correlation co-efficient. If formula shows perfect prediction, then r = 1; r<sup>2</sup> is a measure of the amount of variance the two values share. An r<sup>2</sup> > 0.81 shows very good correlation, r<sup>2</sup> ≥ 0.49 shows good correlation<sup>12</sup>

<sup>b</sup>SCr measured by 4 different methods, thus, correlation varied according to method used

### Table 2. Renal Function Estimates

S-Cr, Umol/L	Age	Sex	eGFR	
			Cockcroft-Gault mL/minute	MDRD mL/min/1.73m <sup>2</sup> (abbreviated)
124	45	Male	71	58 (58.4)
124	70	Male	52	54 (52.5)
354	45	Male	25	17 (17.4)
354	70	Male	18	15 (15.9)

Assumptions: **Race:** White; **Weight** 75kg; **Albumin** 4g/L for S-Cr 124 and 3.5g/L for S-Cr 354; **BUN** 7.1mmol/L for S-Cr 124 and 17.8 for S-Cr 354

## MEMBER PROFILE Reshma Rathod



Reshma Rathod graduated from the University of Toronto pharmacy program in 1999. She has worked in hospital pharmacy ever since. Prior to working in nephrology, she worked in rehab, surgery and medicine. She works at Lakeridge Health Corporation and has experience working with all modalities of nephrology patients. She currently focuses on inpatient nephrology and predialysis patients.

She enjoys working along the continuum of care with renal patients and rises to the challenge of keeping abreast of the many different therapeutic areas. Her biggest challenge is overseeing a large number of patients, and attempting to address all their medication related issues.

Reshma has been involved with RPN for 3 years in the position of co-communications co-ordinator.

In her spare time, she enjoys cooking, working out, shopping and relaxing with family.

Thank you Reshma for your commitment to nephrology patients.

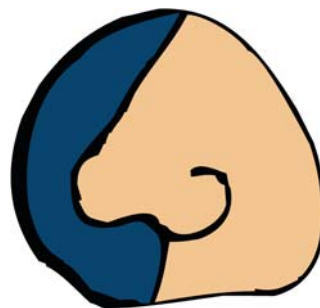
### WHAT'S THAT SMELL?

Do your Renigel® tablets smell like they have been dipped in a cleaning solvent, like ammonia bleach? A patient made me smell his open bottle. It nearly knocked me over. Yes, it definitely smelled like bleach. He called the company, Genzyme, and this is the response he received.

"Investigations have been conducted resulting in complaints reporting a strange odour coming from the tablet bottle. An "ammonia-like" odour is expected and is not an indication of any quality problems related to the product. All product on the manufacturer's stability program sampled after three months was noted to have a faint smell of ammonia. The odour is the result of oxidation of some of the free amine groups on the polymer, and is not an indication of degradation or any quality problems related to the product."

There you have it. Chemistry at its best!! Why couldn't I think of that??

– *Lisa Sever, Renal Pharmacist, York Central Hospital, Richmond Hill, ON*



### WEBSITE UPDATE

#### [www.renalpharmacists.net](http://www.renalpharmacists.net)

In case you've had the pleasure of browsing the Website lately, you would notice that several enhancements have been added to the site. A team of 3 renal pharmacists including Jiten Janie, Hillary Jennings and myself have been working very hard over the last few months to update the information in the website and enhance some of the features.

When you first sign-on you will be asked to update your account information including a clause that allows you to opt out of the mass e-mail system. The mass emails are only sent by the Web Administrator (currently me) or as a reminder of Quarterly Educational meetings. If you do not want to be part of these emails, you need to click "no" on the "e-mail list" option.

In the discussion forums, there is also a spot to allow an email to be sent to you when there is a new posting. At the top right hand corner, it says notify me of all new posts. Click on the

**activate** box if you would like this feature. This can be turned off if later you change your mind. The number of emails generated this way varies per Discussion Forum use; I've received only 4 last week and was able to offer opinion on some efficiently.

The Articles of Interest are again current, and the Web Resources links are all working again. Keep an eye on the Website in the coming weeks as the team continues to add new features such as "Clinical Practice Guidelines", allowing searches through old Newsletter articles, and many more items.

If you have any ideas or comments on what is working or not working on the site, please email me at [bbruinooge@yorkcentral.on.ca](mailto:bbruinooge@yorkcentral.on.ca)

– *Brenda Bruinooge, Renal Pharmacist, Web site coordinator.*

### NEW WEBSITES

#### [www.thekidney.org](http://www.thekidney.org)



---

## ARTICLES OF INTEREST

Please refer to the website [www.renalpharmacists.net](http://www.renalpharmacists.net) for a more complete list and links to the abstracts.

---

Schaeffner ES, Kurth T, de Jong PE, Glynn RJ, Buring JE, Gaziano JM. **Alcohol consumption and the risk of renal dysfunction in apparently healthy men.** Arch Intern Med. 2005 May 9;165(9):1048-53.

Izzedine H et al. **Antiviral drug-induced nephrotoxicity.** Am J Kidney Dis 2005 May;45(5):804-17.

Suetonia C, Palmer, Giovanni F.M., Strippoli, David O. McGregor. **Interventions for preventing bone disease in kidney transplant recipients: A systematic review of randomized controlled trials.** Am J Kidney Dis 2005 Apr; 45(4): 638-50.

Baigent C et al. **First United Kingdom Heart and Renal Protection (UK-HARP-I) study: Biochemical efficacy and safety of simvastatin and safety of low-dose aspirin in chronic kidney disease** Am J Kidney Dis 2005 Mar, 45(3): 472-84.

Ansquer JC et al. **Fenofibrate reduces progression to microalbuminuria over 3 years in a placebo-controlled study in type 2 diabetes: Results from the Diabetes Atherosclerosis Intervention Study (DAIS).** Am J Kidney Dis 2005 Mar;45(3):485-93.

Canavesi C, Petrarulo M, Massarenti P, Berutti S, Fenoglio R, Pauletto D, Lanfranco G, Bergamo D, Sandri L, Marangella M. **Long-term, low-dose, intravenous vitamin C leads to**

**plasma calcium oxalate supersaturation in hemodialysis patients.** Am J Kidney Dis. 2005 Mar;45(3):540-9.

Apsner R, Buchmayer H, Gruber D, Sunder-Plassmann G. **Citrate for long-term hemodialysis: prospective study of 1,009 consecutive high-flux treatments in 59 patients.** Am J Kidney Dis. 2005 Mar;45(3):557-64.

Parekh RS, Zhang L, Fivush BA, Klag MJ. **Incidence of Atherosclerosis by Race in the Dialysis Morbidity and Mortality Study: A Sample of the US ESRD Population.** J Am Soc Nephrol. 2005 May;16(5):1420-6.

Tolman C, Richardson D, Bartlett C, Will E. **Structured Conversion from Thrice Weekly to Weekly Erythropoietic Regimens Using a Computerized Decision-Support System: A Randomized Clinical Study.** J Am Soc Nephrol. 2005 May;16(5):1463-1470.

Ibrahim H, Mondress M, Tello A, Fan Y, Koopmeiners J, Thomas W. **An alternative formula to the Cockcroft-Gault and the modification of diet in renal diseases formulas in predicting GFR in individuals with type 1 diabetes.** J Am Soc Nephrol. 2005 Apr;16(4):1051-60.

Lindberg JS, Culleton B et al. **Cinacalcet HCl, an oral calcimimetic agent for the treatment of secondary hyperparathyroidism in hemodialysis and peritoneal dialysis: a randomized, double-blind, multicenter study.** J Am Soc Nephrol. 2005 Mar;16(3):800-7.

---

## UPCOMING CONFERENCES

---

### CSHP Annual General Meeting

August 13 - 16, 2005  
Ottawa, Ontario  
[http://www.cshp.ca/events/cshpEvents\\_e.asp](http://www.cshp.ca/events/cshpEvents_e.asp)

### RPN Educational Evening

September 20, 2005 – 6pm  
Speaker: Dr. Wendy Lim  
Topic: Anticoagulation  
Holiday Inn Yorkdale, Toronto, ON

### Prevention of Renal Disease 4th Annual Conference

September 23-24, 2005  
Toronto, ON  
<http://www.nephrovention.com/>

### CANNT's 37th National Symposium

October 13, 2005  
Halifax, Nova Scotia  
<http://www.cannt.ca/>

### American Society of Nephrology

November 8-14, 2005  
Philadelphia, PA  
<http://www.asn-online.org>

**A Great Big  
THANK  
YOU!**

*To all of those who  
contributed (especially  
the new contributors!)  
and to ORTHO  
BIOTECH for printing  
and distributing the  
newsletter.*

---

### RPN EXECUTIVE ELECTIONS • SEPT.05

---

The RPN needs volunteers. If you can devote a few hours per month to your renal profession, contact Jenny Ng using the information on the front of this newsletter.

If you are interested in assisting the RPN in any other way, please feel free to contact any member of the Executive. As many of the communications are done by teleconference and email, these positions are open to any renal pharmacist in Canada.

Check out the RPN Website at [www.renalpharmacists.net](http://www.renalpharmacists.net)  
on a regular basis for 2005 CE activities.