FIGURE 3.
HEALTHCARE PROVIDER TIP SHEET: RENAL CARE PLAN FOR PATIENTS WITH STABLE MM

Comorbidities (e.g., diabetes, hypertension, increased age), dehydration, hypercalcemia, progressive disease, and cast nephropathy (particularly light chains) can all contribute to a decline in renal function. Acute renal failure because of disease progression or acute tubular necrosis is generally reversible if corrected early. Avoid drugs that can worsen preexisting kidney disease.

HISTORY AND PHYSICAL EXAMINATION

- Quarterly review of medications, changes in medical history, and physical examinations are recommended.

BLOOD TEST

- Perform CBC, CMP, SPEP, SIFE, 24-hour UPEP, UIFE, LDH, serum FLC assay, beta-2-microglobulin every three months if stable.
- Vitamin D deficiency (vitamin D 1-25, vitamin D 25 hydroxy), hyperparathyroidism (serum PTH-intact) should be assessed at baseline and periodically.

BONE SURVEYS

- Perform metastatic skeletal survey annually or earlier if new skeletal symptoms occur.

URINALYSIS

- Perform urinalysis quarterly if on bisphosphonates to assess for albuminuria.

NEPHROLOGIST FOLLOW-UP

- See nephrologist annually or as needed if decline in GFR is less than 30.

DIAGNOSTIC IMAGING

- Perform renal ultrasound to rule out hydronephrosis with new onset renal insufficiency. Avoid the use of IV dye or contrast with PET-CT or MRI scans if possible.

MEDICATIONS

- Avoid the use of NSAIDs, aminoglycosides, COX-2 inhibitors. Many over-the-counter supplements and medications can contribute to worsening renal dysfunction, but others can be given safely with dose reduction. Consult a trusted website, such as Medicines Complete, to evaluate safety.
- Bisphosphonates must be used with caution, and serum creatinine must be obtained prior to each dose.
- ESAs must be used with caution with recent safety concerns (e.g., stroke).

CALCULATION OF MEDICATION DOSE

- Many drugs to treat MM require a dose decrease for patients with renal insufficiency based on GFR or creatinine clearance.
- Many medications used to treat MM are safe to give after dialysis on a dialysis day.
- Drugs that require dose reduction based on GFR
  - ☐ Lenalidomide
  - ☐ Ixazomib
  - ☐ Carfilzomib
  - ☐ Melphalan
- Supportive care drugs that may require dose reduction based on GFR
  - ☐ Amoxicillin clavulante
  - ☐ Acyclovir
  - ☐ Low-molecular-weight heparins and factor inhibitors (e.g., rivaroxaban)
- Drugs that are potentially nephrotoxic
  - ☐ NSAIDs, including COX-2 inhibitors
  - ☐ Vancomycin, aminoglycoside antibiotics
  - ☐ Radio-contrast IV dye

GENERAL PREVENTIVE RULES TO PROTECT KIDNEY FUNCTION

- Be aware of the nephrotoxic potential of specific drugs.
- Be aware of the increased risk in the elderly.
- Assess the risk–benefit ratio for treatment with any drug.
- Avoid dehydration.
- Limit dose and duration of treatment, particularly if the drug is known to be nephrotoxic.
- Adjust dose based on GFR.
- Avoid combining potentially nephrotoxic drugs.

CBC—complete blood count; CMP—comprehensive metabolic panel; COX—cyclooxygenase; ESA—erythropoiesis-stimulating agent; FLC—free light chain; GFR— glomerular filtration rate; LDH—lactate dehydrogenase; MM—multiple myeloma; MRI—magnetic resonance imaging; NSAID—nonsteroidal anti-inflammatory drug; PET-CT—positron-emission tomography–computed tomography; PTH —parathyroid hormone; SIFE—serum immunofixation; SPEP—serum protein electrophoresis; UIFE—urine immunofixation; UPEP—urine protein electrophoresis

Note. From "Renal Complications in Multiple Myeloma and Related Disorders: Survivorship Care Plan of the International Myeloma Foundation Nurse Leadership Board," by B.M. Faiman, P. Mangan, J. Spong, & J.D. Tariman, 2011, *Clinical Journal of Oncology Nursing, 15,* pp. 71–72. Copyright 2011 by Oncology Nursing Society. Adapted with permission.

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