Refractory Congestive Heart Failure in Dogs with Chronic Degenerative Mitral Valve Disease

Dogs with stage D CHF (furosemide dose > 6 mg/kg/day), will often respond to a change in diuretic therapy:

1) Sequential nephron blockade:
    a. Spironolactone 1-2 mg/kg once to twice daily
    b. Hydrochlorothiazide 0.5 -2 mg/kg once to twice daily
    c. If using HCTZ- decrease the dose of furosemide to avoid profound hyponatremia (i.e. by ½)
2) Switch loop diuretic and add spironolactone (if the patient is not already receiving this)
    a. Switch furosemide to torsemide: 0.1-0.2 mg/kg PO bid
        i. Torsemide comes in 5 mg tablets
        ii. Torsemide can be compounded
3) Add in injectable furosemide 2 mg/kg SQ once weekly to once daily depending on the severity of clinical signs and renal values
4) If the patient's systolic blood pressure is > 120 mmHg, afterload reduction will also help relieve signs of congestion:
    1) Amlodipine 0.1 mg/kg PO q24 hours (this can be increased to bid dosing) or
    2) Hydralazine 0.5 mg/kg bid to tid

You can utilize afterload reduction if the BP is <120 mmHg but greater than 85 mmHg, I would use a lower dose (i.e. 0.05 mg/kg once daily) to avoid hypotension as you can always increase the dose if the patient tolerates it well.

If the patient is hypotensive (BP <90 mmHg), you can increase the pimobendan dose to 0.3-0.5 mg/kg PO bid.

For those patients that require hospitalization:

Positive inotropic therapy includes pimobendan 0.25 mg/kg PO bid and/or dobutamine 1-10 ug/kg/minute IV CRI (I start with 1 ug/kg/min and increase every 15 minutes by 1 ug/kg/min).

Positive inotropic therapy will be in addition to IV furosemide (initial dose 2-4 mg/kg IV) bolus followed by CRI (0.6 -1 mg/kg/hour for 3-6 hours).

Dogs with CDVD will also tolerate afterload reduction well with concurrent positive inotropic therapy. I will initiate nitroprusside 1-20 ug/kg/minute (I start at 1 ug/kg/minute and increase this dose every 15 minutes following measurement of BP) in those dogs with CDVD that are experiencing life threatening edema (expectorating pink fluid). I typically initiate the dobutamine first and then add the nitroprusside. Our goal with concurrent positive inotrope therapy with afterload reduction is to maintain systolic BP >85 mmHg (mean >60 mmHg) while we relieve signs of congestion.