



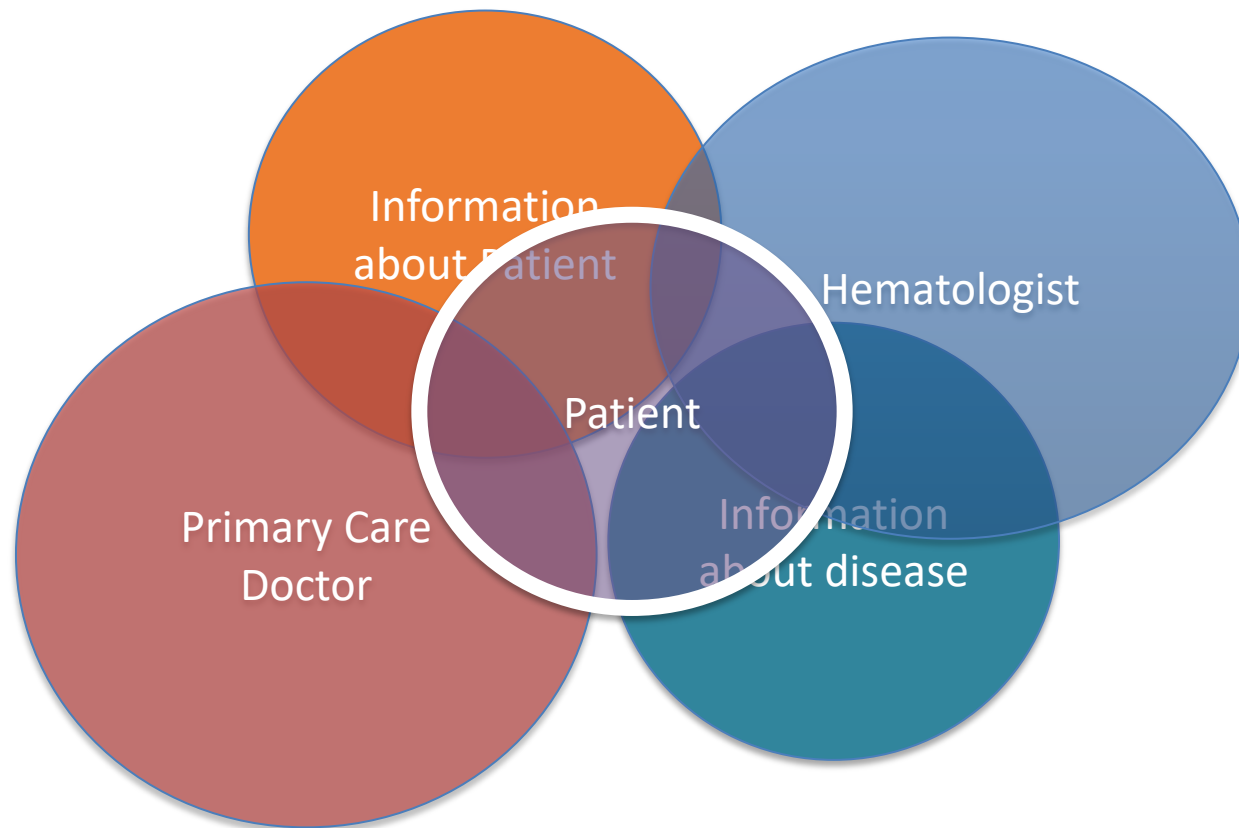
What's Routine?

General Medical Care in Patients with MPNs

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Conference 2017



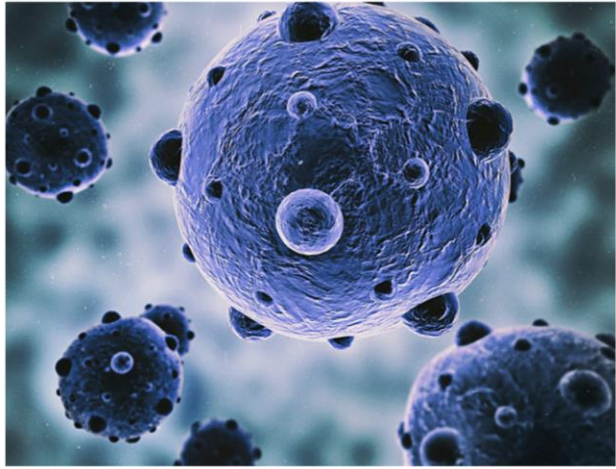
Communication



Today's Goals

- Review unique risks faced by MPN patients
- Review targets for optimizing
 - Optimizing cardiac health
 - Minimizing infection risks
 - Limiting other cancers
- Discuss strategies for increasing provider-to-provider communication

Overall Risks

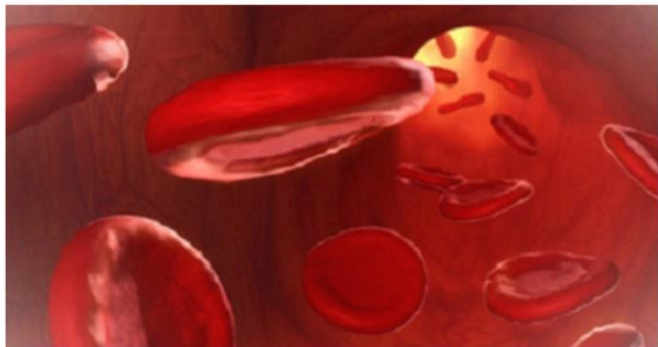


Risk of Infections: Bacterial, Viral, Fungal



Risk of Heart Attack

Risk of Bleeding



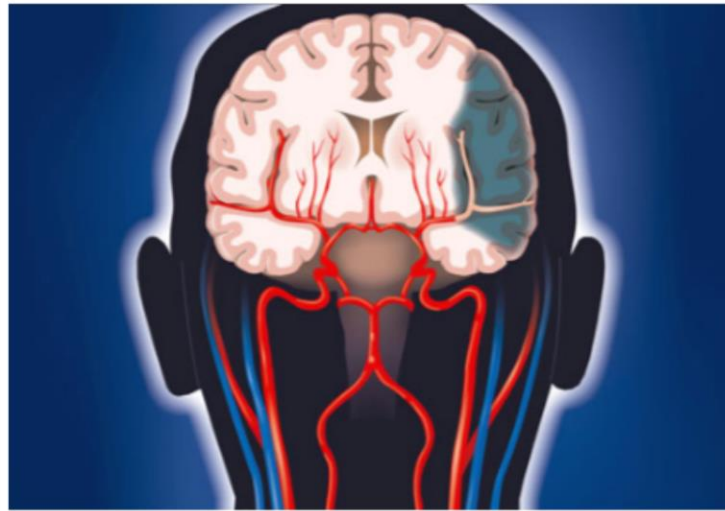
¹Hultcrantz M et al., JCO Vol 33; No 20; July 2015

Overall Risks



Risk of Blood clots
in the legs, lung,
liver and skull veins

Risk for arterial clots
that cause stroke



Control what you can

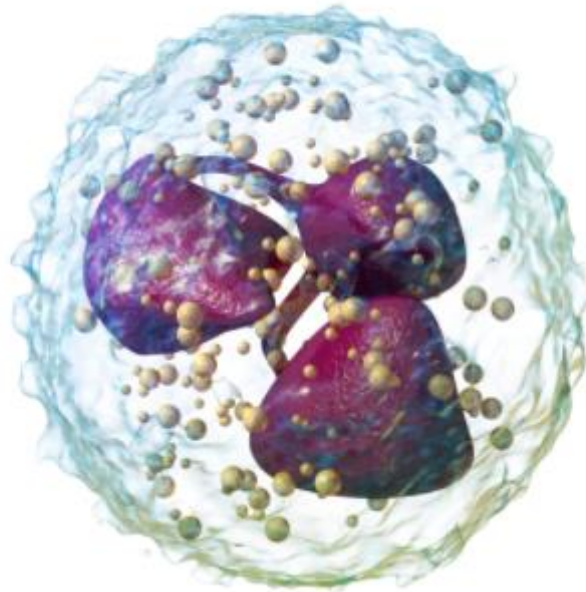


"You're fifty-seven years old. I'd like to get that down a bit."

Infections

- Large studies show increased rate of fatal infections
- Why might that be?
 - Disease → irregularities in immune system
 - Low blood counts: Neutropenia
 - Splenic dysfunction
 - Treatment with JAK inhibitors

Neutropenia



- Determination
 - Blood smear examined
 - Percentage neutrophils among total white blood cells calculated
- Treatment
 - If asymptomatic, can watch
 - If repeated infections, then prophylaxis recommended

Preventing Infection

- Prophylaxis only in selected patients

NCCN: “antibiotic prophylaxis for recurrent infections is recommended”

- Bacterial: Flouroquinolone antibiotic
- Viral: Acyclovir or other
- Fungal: Fluconazole, Posaconazole, Voriconazole

- Vaccination

- Influenza vaccine to patient and family
- If immunocompromised (i.e. no spleen, on JAK inhibitor)
 - Avoid live-attenuated virus vaccination, i.e. no Zoster vaccination
 - 7-days contact avoidance from family members

Infections related to treatment

- Most common:
 - Bacterial infections of respiratory and urogenital tract
 - Frequency decreases with length on therapy
 - Severe infections no more common than patients on placebo
- Likely increased risk for rare infections
 - For example, tuberculosis reactivation
 - Shingles (Herpes zoster)

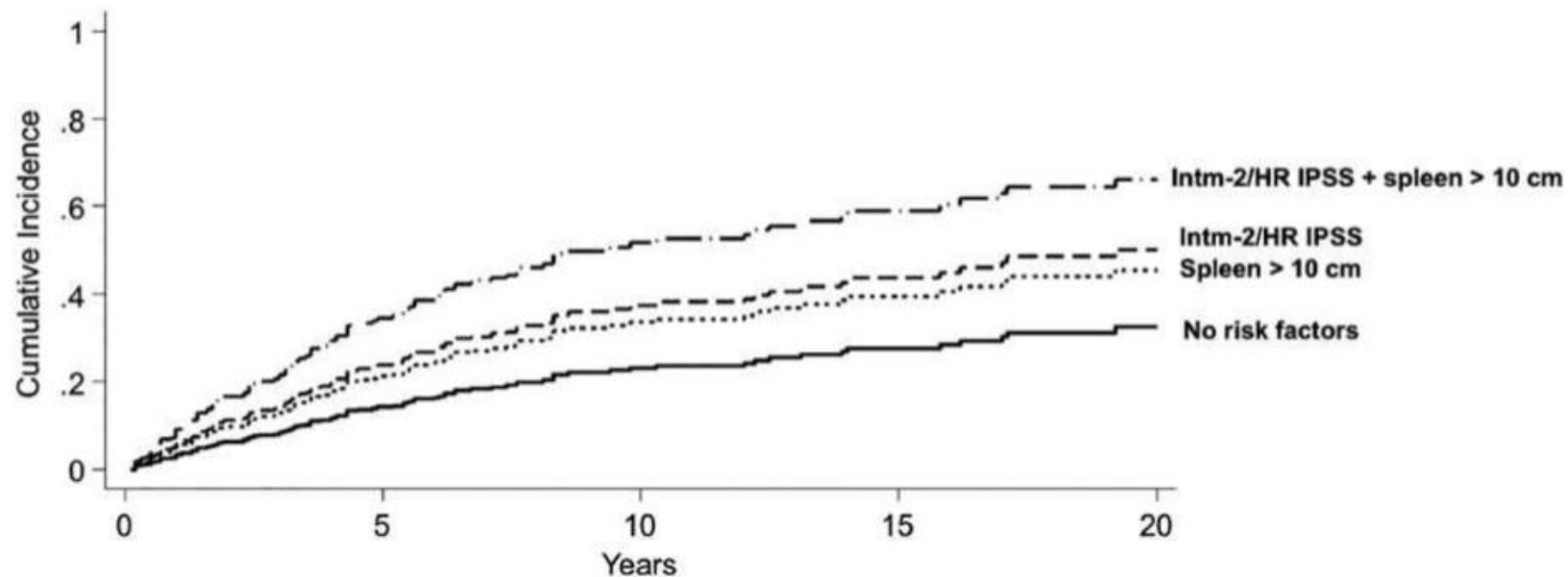
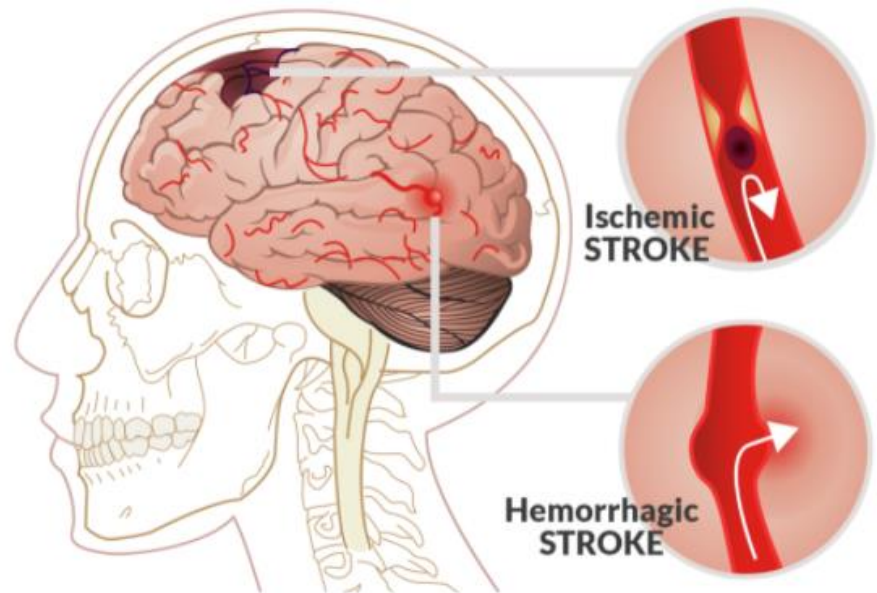
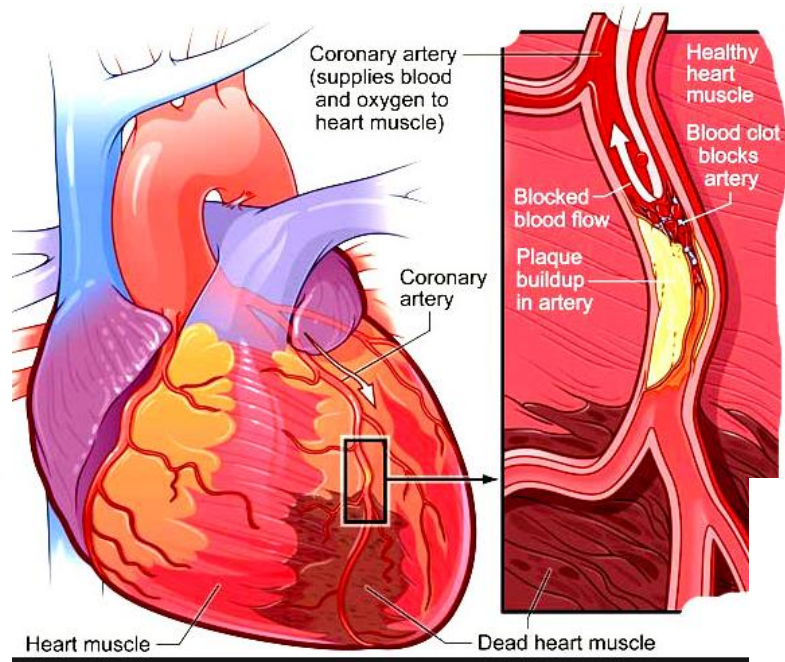


Figure 2. Cumulative incidence of infectious complications according to IPSS and splenomegaly.

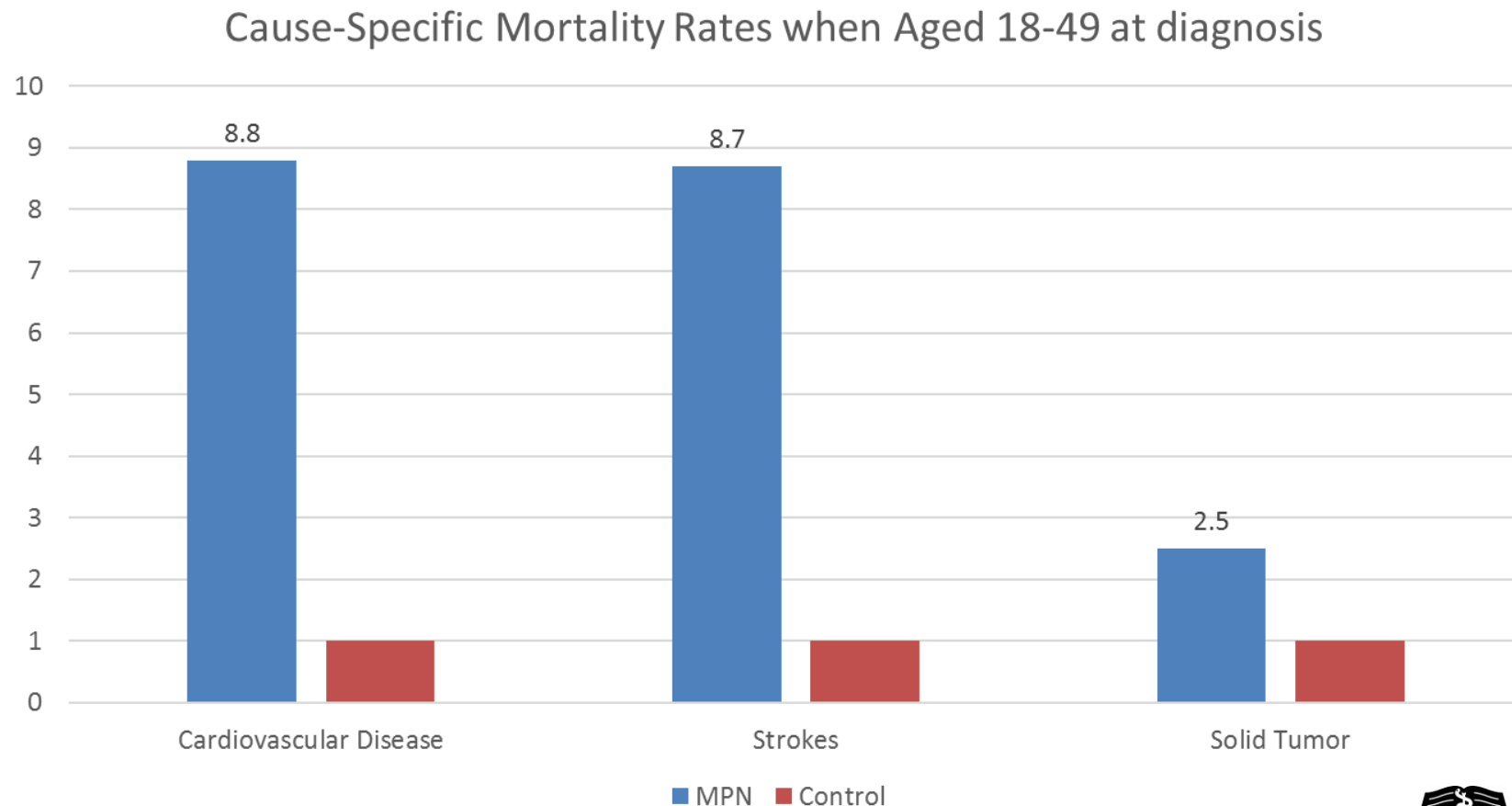
Care while on therapy

- Avoid starting therapy while actively infected
- Ensure no tuberculosis risk prior to starting treatment
- Watch for signs/symptoms of zoster
- Rule out Hep B prior to starting therapy
- No routine recommendations for prophylaxis against infections

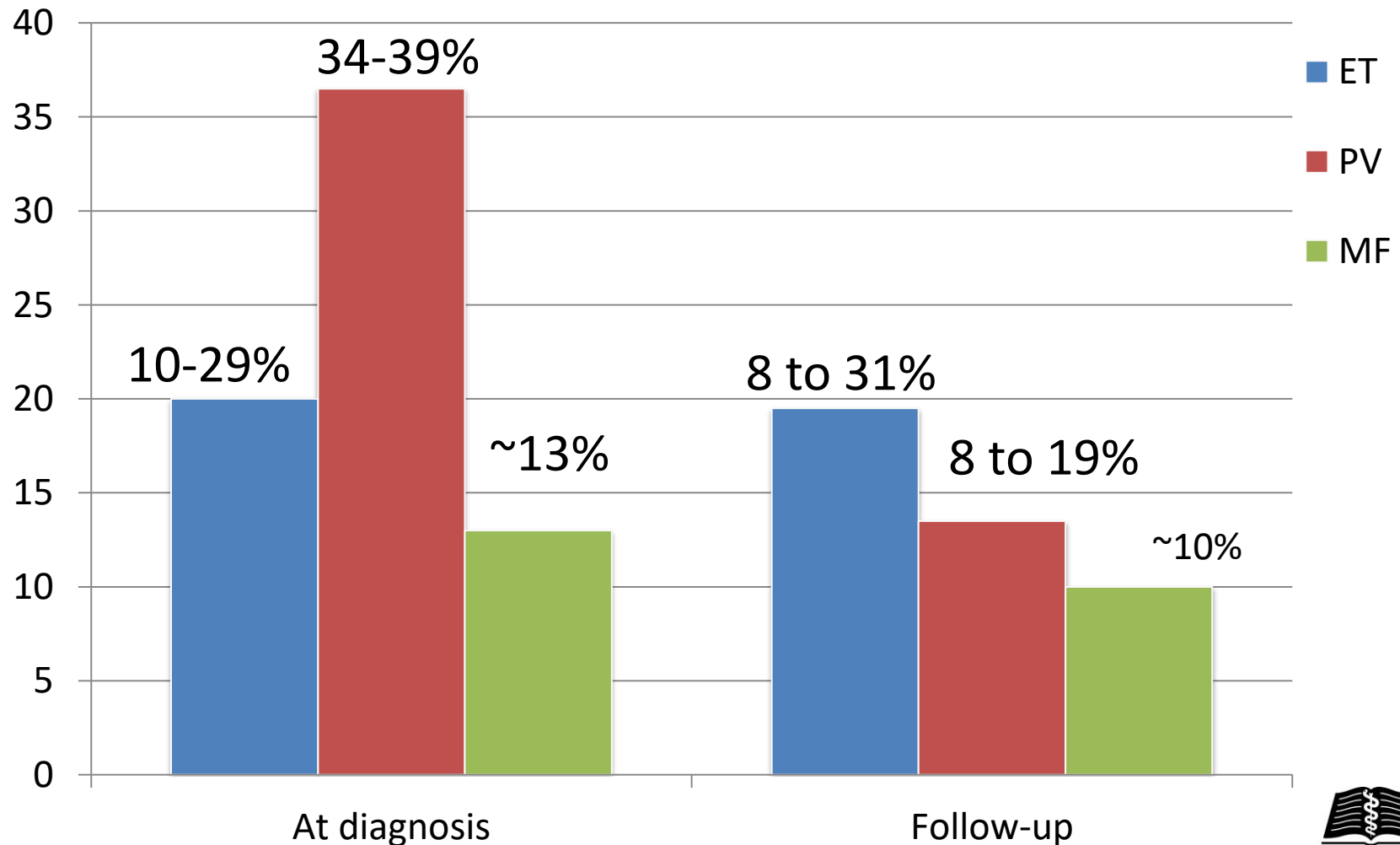
Arterial Clotting Events



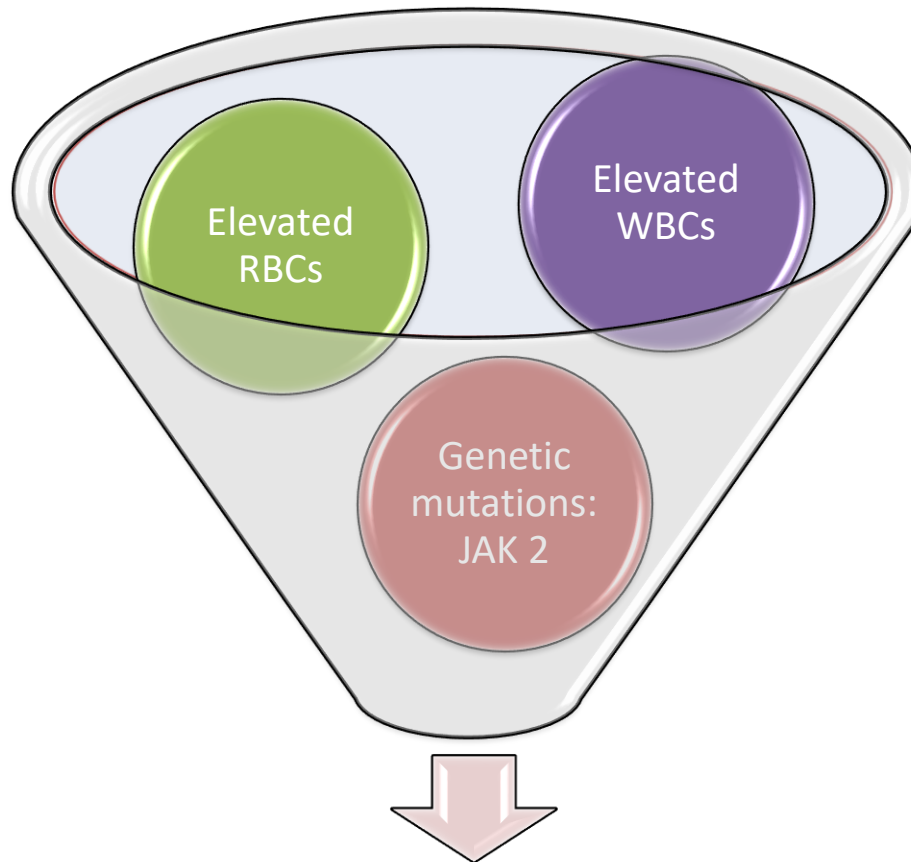
Younger Individuals



Arterial or venous blood clotting complications



Why more common?



Abnormal interaction between
the blood and blood vessels

Cardiac Risk factors

- Age
- Smoking
- Total Cholesterol
- “Good cholesterol”
- Diabetes
- Blood pressure
- Activity level
- Weight



60 yo male; no diabetes, smoker, total cholesterol of 210; good cholesterol of 30; blood pressure of 140/70 mm/hg

Risk of heart attack in next 10 years: 23%

If he is not a smoker, takes medication or diets to reduce cholesterol by 30 points and lowers his BP to 130/70: Risk drops to 13%

Blood Pressure Targets

Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than 120	and	less than 80
Prehypertension	120 – 139	or	80 – 89
High Blood Pressure (Hypertension) Stage 1	140 – 159	or	90 – 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
<u>Hypertensive Crisis</u> (Emergency care needed)	Higher than 180	or	Higher than 110

Guidelines: American Heart Association

Targets

- Complete abstinence from smoking
- Heart-healthy eating patterns
 - American Heart Association
 - Use up the calories you take in
 - Choose high-nutrient foods: Fruits and veges, whole grains, low-fat dairy, poultry and fish without the skin, nuts and legumes, non-tropical vegetable oils
- Keep your body-mass index between 18-24.9
 - AHA has a calculator

Cholesterol?

Metrics

- Total cholesterol = HDL + LDL + 20 percent of your triglyceride level.
- HDL (good) cholesterol: High is better
- LDL (bad) cholesterol: Low is better
- Targets are complicated – depend on your age, prior history, presence or absence of diabetes
- Frequency of testing: discuss with PCP

Interventions

- Dietary interventions
 - Fish, Omega-3 fatty acids
 - Oatmeal, oat bran, high soluble fiber
- Exercise
 - Boost HDL, decreases danger of LDL
- “Statins”
 - Lower LDL
- Nicotinic Acid “Niacin”
 - Raise HDL
- Fibrates
 - Lower triglycerides

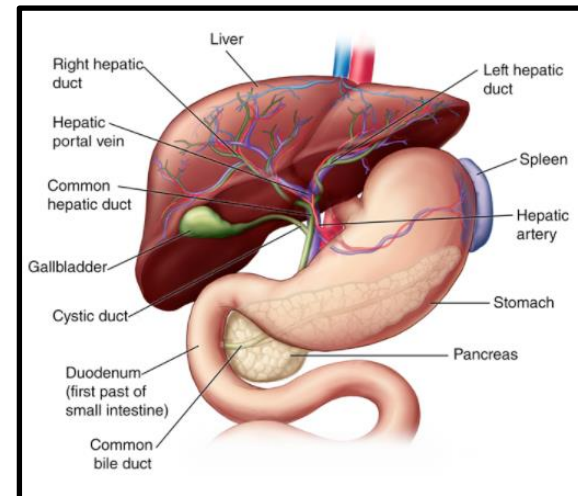
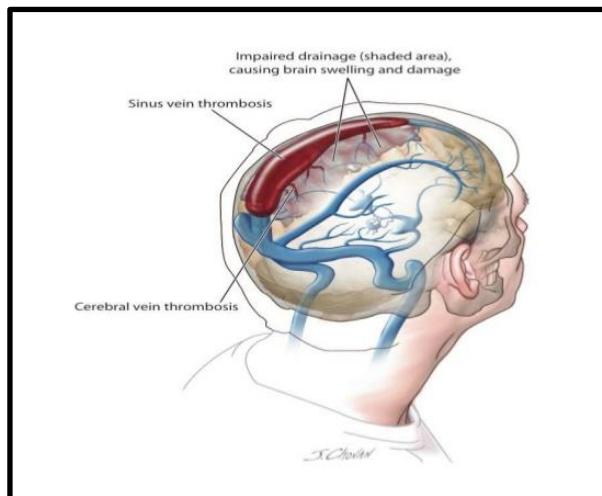
Exercise

- Aerobic Exercise
 - Lowers cholesterol and BP
 - Increases endurance
 - Lower resting heart rate
 - Weight loss and maintenance
 - Stress relief
 - Improved sleep
- 30 min; 5-7 days a week



What about Venous Clots?

- Most common locations
 - Legs (deep venous thrombosis “DVT”)
 - Lungs (pulmonary embolism “PE”)
- Can also occur in abdominal vasculature and brain drainage



Treatment of PE/VTE or Other

Protection from Blood Clots: "Prophylaxis"	Initial Treatment	Extended Treatment
MPN Disease Control		
Around the time of surgery	Blood Thinning medications for at least 3-6 months	Consider extended treatment for abdominal clots, SVT, life threatening clots, second clot
	Usually pause aspirin while on blood thinner unless risk >benefit	

What about bleeding?

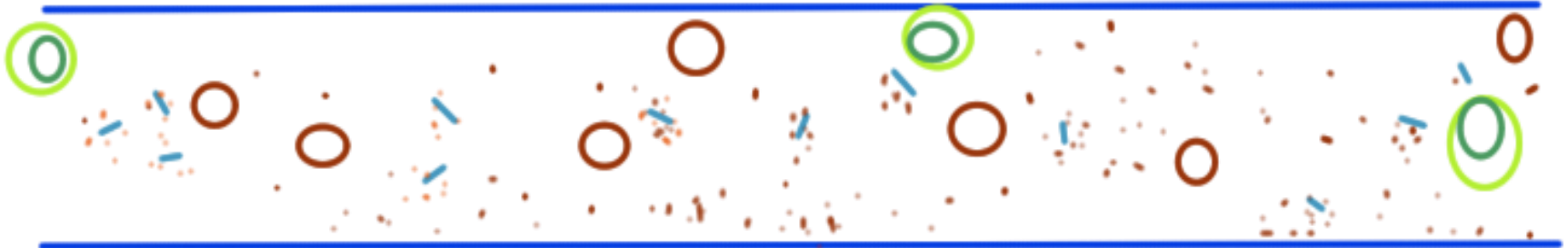
- Can occur in patients with very high platelet count, i.e. over 1.5 million/uL
- Called acquired Von Willebrand's disease
- Treatment
 - Avoid aspirin
 - Lower platelet count

Acquired VWD

Normal Blood Vessel



Increase in platelets



Modifying Surgical Risk

Planning	--Assessment by hematologist --Optimize blood counts --Especially platelets if splenectomy planned
Preoperative	--Discontinue ASA
Postoperative	--Anticoagulation – LMWH --Clinical vigilance re hemorrhage --US of abdominal veins



Other cancers?

- Slightly increased risk for solid tumors
 - Italian Study
 - Roughly 4 times as likely to acquire lymphoma-type diseases
 - Danish Study
 - Incidence of solid tumors slightly higher in patients with ET, PV and CML
 - Swedish Study
 - Increased incidence of thyroid and parathyroid cancers and skin cancers
 - MD Anderson Study
 - Statistically significant increase in solid tumors

Preventative Health

- Everybody
 - No tobacco
 - Good sun protection;
 - Regular skin evaluations
 - Healthy diet; Weight control
 - Limit alcohol
- Age-specific (start date depends on family history)
 - Mammogram, colonoscopies, PAP smears, prostate exams
 - Low-dose CT scans if smoker

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Provider Collaboration

- Communication between providers critical
- Lots of ways you can facilitate
 - Keep your own records to bring back and forth
 - i.e. information about labs, clinical trials
 - Ask about sharing EMR
 - Encourage communication
 - Work with ancillary staff
 - Engage in your care



Thank You for all you've done to
advance this field

Happy to take any questions

