

POST HYSTERECTOMY HEMATOCRIT:

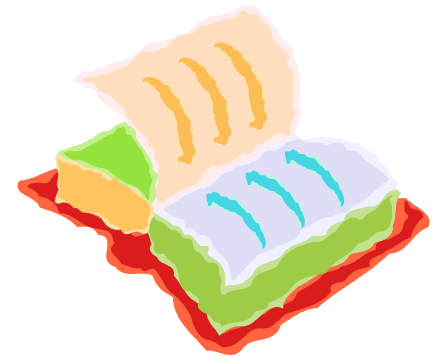
*A LEARNED ROUTINE, OR
CLINICALLY USEFUL?*

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- In the field of medicine, many practices are based on tradition and continue to be passed down during residency training...

- Example: Standard Gynecology textbooks recommend obtaining a post operative hematocrit after a major surgical case.



** Hysterectomy remains one of the most common surgical procedures performed by Obstetricians and Gynecologists, with an estimated 600,000 done annually.*

- Post hysterectomy hematocrits are usually ordered with the intent to identify intra-abdominal bleeding that can cause anemia, requiring the transfusion of blood products.

However, factors need to be taken into account, such as:

- difficulty of procedure
- estimated blood loss
- pre operative CBC values

Study Aim:

- To identify clinical parameters negating the need for routine post-hysterectomy hematocrits.



- In this era of “managed care,” routine laboratory testing practices should be examined...



Study Goals:

- *To compare differences in pre, intra, and post-operative clinical indicators for blood transfusion.*
- *To identify clinical parameters supporting the need for routine evaluation of a post-hysterectomy hematocrit by a complete blood count (CBC) draw.*
- *To propose clinical parameters for ordering a post-operative CBC.*

Study Design:



- A retrospective chart review of a random sample of 230 patients undergoing a trans-abdominal, vaginal or laparoscopic hysterectomy at our institution between January, 2004, and June, 2005.

Patients Excluded:

- oncology patients
- patients who had a 'code red' during their hospital stay
- those whose stay was greater than 25 days

Collected Data:

- **Plausible Confounding Factors:** height, weight, history of cardiovascular disease, previous abdominal or pelvic surgery
- **Pre-operative Factors:** hemoglobin, hematocrit, heart rate, and blood pressure
- **Intra-operative Factors:** type of surgery, estimated blood loss, sponge count, input/output ratio, surgery time from incision to closure
- **Post-operative Factors:** time and values of hematocrit draw, blood pressure readings, morning after input/output ratio, and length of stay

Incidence of Transfusion:

- Overall = 10.4%
- Excluding oncology patients = 7.8%

*Transfused patients had a longer length of stay than non-transfused patients.

*Comparison of characteristics between transfused and non-transfused patients revealed no statistically significant differences between surgery type, age, weight, body mass index, and previous history of cardiovascular disease.

Pre -operative

	Transfusion	N	Mean	SD	p-value
HCT Pre-admission	No	190	39.09	4.90	0.010
	Yes	22	36.25	4.35	0.010
HGB Pre-admission	No	104	13.17	1.60	0.001
	Yes	19	11.77	1.59	0.001
Admit HR	No	207	79.69	12.04	0.011
	Yes	22	86.68	13.81	0.011
Admit BP Systolic	No	207	130.88	20.45	0.192
	Yes	22	124.91	19.32	0.192
Admit BP Diastolic	No	207	73.12	12.07	0.546
	Yes	22	71.45	13.86	0.546

Intra-operative

	Transfusion	N	Mean	SD	p-value
Est. Blood Loss	No	207	290.89	219.70	0.001
	Yes	22	815.91	640.01	0.001
Lap sponge count	No	207	15.92	10.92	0.005
	Yes	22	27.95	17.57	0.005
Ortho sponge count	No	207	11.74	4.53	0.415
	Yes	22	10.91	4.53	0.415
Input-Output Ratio	No	205	0.90	0.15	0.010
	Yes	21	0.88	0.11	0.010
Surgery time	No	207	126.00	46.74	0.001
Incision to Closure	Yes	23	191.91	83.19	0.001

First post-operative

	Transfusion	N	Mean	SD	p-value
HCT Value Post-op	No	138	32.68	4.37	0.004
	Yes	23	29.73	5.14	0.004
HGB Value Post-op	No	136	10.92	1.45	0.006
	Yes	23	9.98	1.63	0.006
HR Post-op	No	207	80.07	13.54	<.001
	Yes	22	91.27	14.38	<.001
BP Systolic Post-op (first on floor)	No	207	124.64	18.38	0.706
	Yes	22	126.18	16.61	0.706
Floor BP Diastolic	No	207	69.07	10.98	0.095
	Yes	22	73.18	9.82	0.095

Three main clinical indicators to aid post-operative CBC order decision:

- Pre-operative hemoglobin at, or less than 12g/dl.
- Pre-operative hematocrit at, or less than 36g/dl.
- Intra-operative blood loss of 425cc, or greater.

Patients Meeting Clinical Parameters

Criteria Status	Transfused	Not Transfused	Total
Meets: Order CBC	16	35	51
Does not Meet: Do Not Order CBC	1	64	65
Total	17	99	116

Sensitivity = 0.94

Specificity = 0.65

PPV=0.31

NPV=0.98

Conclusion

A conscious approach to ordering post-operative lab tests will help slow the exponentially rising cost of health care.

Objective clinical parameters may now aid the physician in his/her decision to order post-op testing.