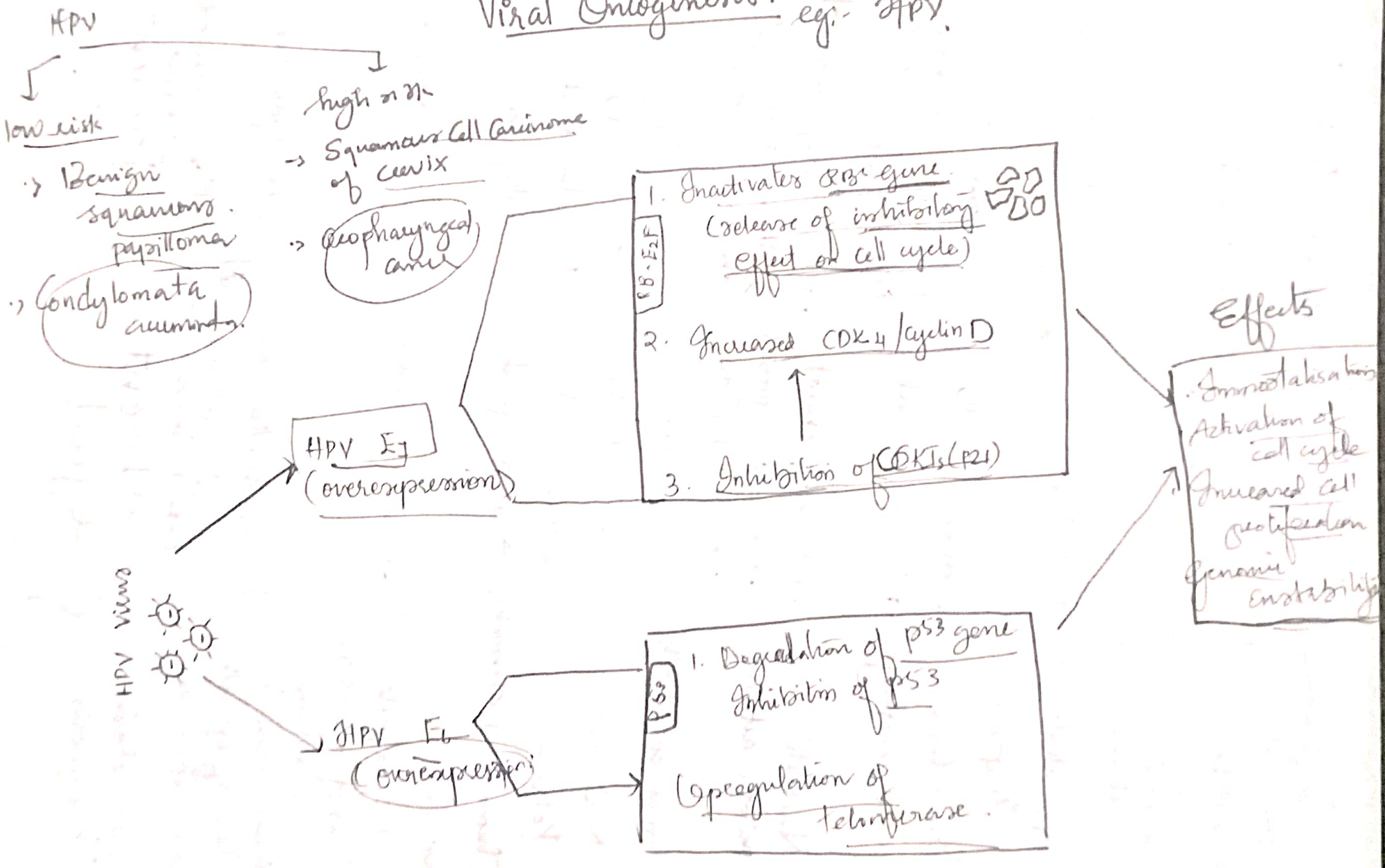
Viral Oncogenesis: eg:- HPV.



Differences b/w Benign & malignant Lesions

Characteristic	Benign	Malignant
A. Microscopic features		
1. Differentiation / Anaplasia	→ Well differentiated	→ Well to poorly differentiated. *Anaplasia is characteristic.
2. Pleomorphism	→ Absent (usually)	→ Commonly present
3. Nuclear morphology	→ Usually normal	→ Usually hyperchromatic, irregular outline & pleomorphic
4. Nucleoli	→ Usually absent	→ Usual & prominent.
5. Mitotic activity	→ Rare & if present normal & bipolar	→ Hight & may be abnormal or atypical.
6. Tumor giant cells	→ not seen	→ May be seen & shows nuclear atypia.
7. N:C Ratio	→ Normal (1:4 to 1:6)	→ Increased (1:1)
8. Polarity	→ Maintained	→ Usually lost
9. Chromosomal abnormality	→ Not found	→ Usually seen.
B. Gross features		
1. Border / Capsule	→ Mostly circumscribed	→ Usually poorly defined
2. Areas of necrosis & hemorrhage	→ Rare	→ Common, often found microscopically
C. Clinical features.		
1. Rate of growth	→ Usually slow	→ Relatively rapid
2. Local invasion	→ Usually well demarcated without invasion.	→ locally invasive, infiltrate surrounding normal tissue
3. Metastasis	Absent	Present.
4. Prognosis	Good	Poor.