There are no translations available.

**PROSTATIC CANCER OF VIRAL ORIGIN: HOMOLOGY OF HUMAN ONCOGENIC PAPILLOMAVIRUS (HPV) L1 WITH NUCLEOPHOSMIN (NPM1), A CONTROLLER OF ANDROGEN RECEPTOR TRANSCRIPTION**

**Association de la Recherche contre les Tumeurs de la Prostate ARTP 2014, 19 November, Paris**

**Background:** We showed previously that HPV contained **P**rostatic **C**ancer (PC) related oncogenic proteins:

1°) HPV **E2** (51-112) is homologous to an **Epidermal Growth Factor** *(Tran MKG, 1997)*.

2°) **E1** to **PTEN**, E6 and **L1** to the c-Myc inhibitor **Bin-1** (**B**ridging **in**tegrator **1** or amphiphysin II), a tumor suppressor deleted in 42% of PC
*(Tran GMK, 2008).*

3°) HPV-18 **E2** mimics **Osteoprotegerin** and **P**ara**TH**ormone **r**elated **P**rotein (PTHrP) active

site (explaining bone metastasis). Anwar K (1992) found 80% HPV-18 in metastatic PC in Japan. Our meta-analysis concluded to a frequency of about 30%-40% (21-80%) oncogenic HPV (-16, -18, -33) in PC
*(EuroConf Cancer Pasteur Inst, 2004).*
The most important point is the
**PCR (E6 primer and fresh tissue**
); L1 primer and formalin-fixed, paraffin-embedded yielded negative results. For example, Terris MK (1997) obtained 21% positivity with E6 and 0% with L1 primer, in the
***same***
patients. Recent results confirm that use of paraffin-embedded tissues
*(Groom HCT, 2012; Ghasemian E, 2013)*
or L1 primer
*(Sylvestre RV, 2009)*
or both (13/104 versus 8/104
*Aghakhani A, 2011)*
were unsuccessful. Positive results were reported (in 10.5%
*Jalilvand S, 2014;*
worse overal survival,
*Pascale M, 2013).*

Noda S (1975) described **papillomavirus-like particles** in electron microscopy of prostate cancer tissue. Whitaker NJ (2013) found
**koilocytes**
in HPV-18 infected prostate cancer.

Our **aim** is to link HPV to Androgen Receptor (AR). Another hormonal cancer linked to virus is breast cancer, as the virus integration site is Aromatase, the estrogen synthetizing enzyme
*(Tekmal RR, 1995)*
.

**Methods:** Amino Acid (AA) sequence comparison between HPV *(Lowe J, 2008)* and **NPM1 (nucleophosmin)**
, which controls
**AR**
transcriptional activity by promoting S-phase entry and hyperproliferation (cyclin switch D1 to E1 and p27kip1 loss)
*(Boudra R, ARTP 2013)*
. Clinically, high
**p27kip1**
is a correlate of better survival after prostatectomy at 5 years.

**Results:** HPV L1 chimera (types 16, 18, 31, 33, 44, 56, 66, 115) [type-16, AA 167-219] is homologous to NPM1 chimera (human, duck, alligator, sheep, rhinoceros, turtle,…)[AA 1-48]

**NPM1 MEDSMDMDSMQPLRPQMFLFGC- - - SGAHWARISPCSLLGGFFAGCELKSD**

**HPV L1 VEDSMDV – SMDPKQIQMFLI GC**KPP**TGEHWAR-SPCSPVG- --AGDCELKSD**

**Conclusion:** Anti-androgen escape may be explained by AR mutations, but also in a PC subset (about perhaps 30%-40%, depending on the number of HPV serotypes screened) by a viral infection (oncogenic HPV), as HPV L1 is a viral NPM1 mimetic, enhancing AR transcriptional activity and inducing lethal p27kip1 loss. Japanese mushroom **Shii take** is a non toxic and highly efficient anti-HPV *(Smith JA, 2014)* . **Indole 3 carbinol** from **cruciferous vegetables** (Brussels sprouts, broccoli) are efficient against HPV-16 by viral transcription inhibition *(Bradlow HL, 1999; Rieck GC, 2006).* Anti-cancer drugs discovered by **HPV-18** infected KB cells screening *(Perdue RE Jr, 1982)* may act, **by *serenpidity* , as anti-HPV** : Taxol (Paclitaxel, Docetaxel, Cabazitaxel), topotecan, Vinca Alkaloids (Vinorelbine, Vinflunine) . **HPV vaccination**

of young men could protect against PC.

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