

ACTIVE SURVEILLANCE IN A COHORT OF YOUNG CHINESE PTMC PATIENTS

LUO Bin¹, CAI Zongyou², ZHANG Huabin³

1.Department of General Surgery, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, CHINA

2.Medical student, School of Medicine, Tsinghua University, Beijing, CHINA

3.Department of Ultrasound, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, CHINA

Introduction: Active surveillance (AS) is an alternative to immediate surgery for low risk PTMC patients, previous studies showed that young patients was more likely to progress under AS. However, majority of Chinese PTMC patients was relatively young, very few study demonstrated if AS was still a feasible approach in these low risk young patients.

Materials and Methods : This is a prospective, single-arm clinical study. FNA-proven PTMC patients who understood the meaning of AS and signed the informed contents were recruited since 2018. The follow up time started from FNAC diagnosis or traced back the first time when the same nodule (PTMC) found. Ultrasound was performed every 6 to 12 months in the first two years and then yearly by an experienced specialist (Dr. Zhang). No L-T4 was prescribed unless the patients' TSH >4 mU/L. Patients with tumor enlargement (≥3mm) and/ or typical lymph node metastasis by ultrasound or FNAC confirmed, or the tumor invaded the thyroid capsule were recommended for surgery.

Results: Totally, 124 low risk PTMC patients were followed up at least 12 months. Their clinical characteristics was showed in Table1. The median age of this cohort was 37 y (21-64 y), 75% were female, the average biggest diameter was 6.2 mm. 10 patients (8%) had clinical progression of the disease, among them, 7 with tumor growing ≥3mm and 6 with appearance of new metastatic lymph nodes (overlapped in 3 patients). Table 2 summarized the PTMC progression characteristics. **26 patients (21%) received surgery**, 9 of them because of tumor progression, 1 tumor-growing patient refused surgery and kept AS; among another 17, 9 chose to stop AS themselves, 4 was found enlarged lymph nodes but not confirmed by final pathology, 2 was detected anterior capsule invasion, these 6 patients were recommended surgery by endocrine surgeon (Dr. Luo) and 2 patients with unknown reason.

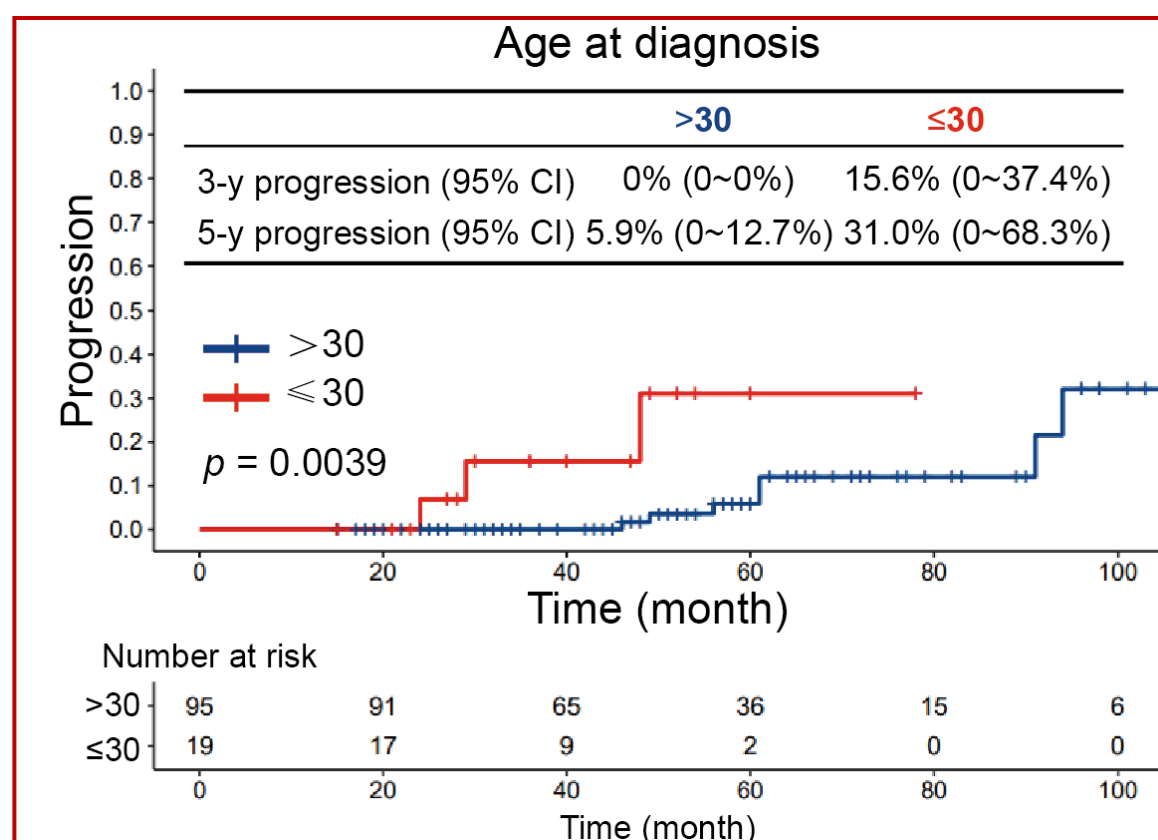
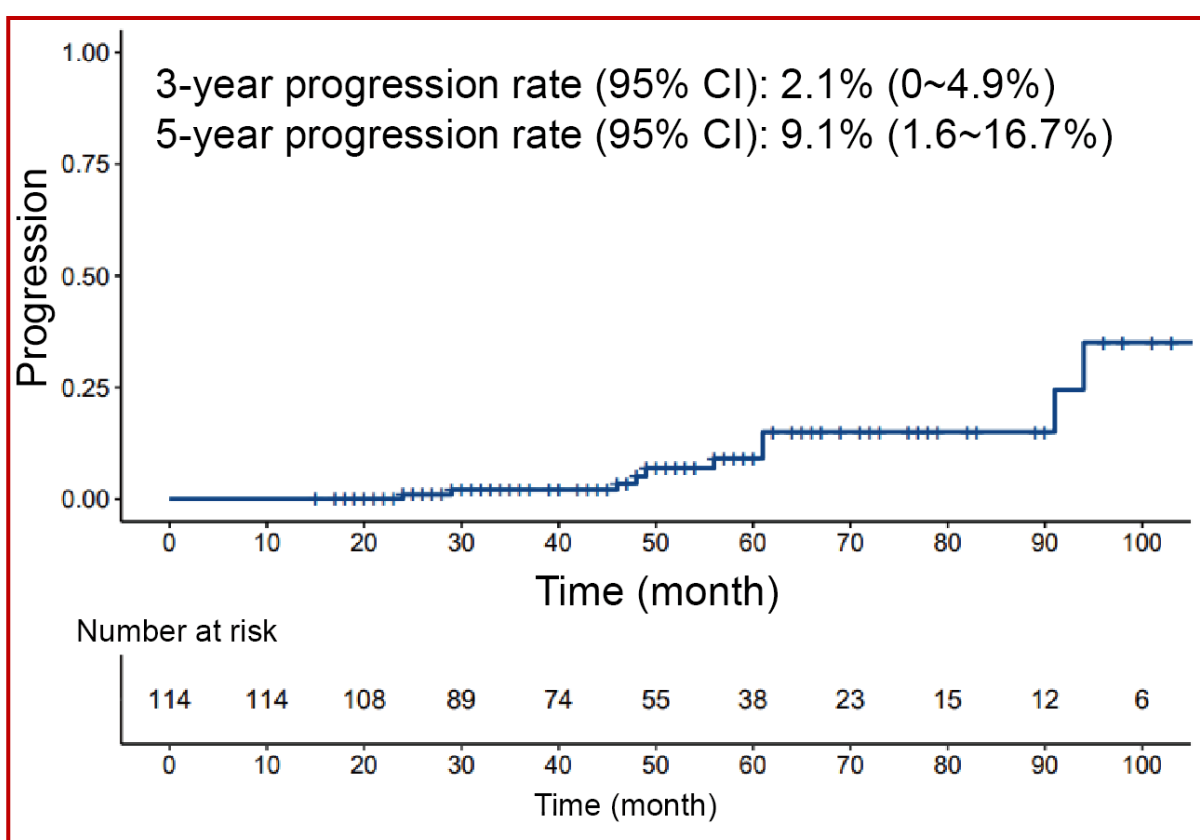
Table 1. Clinical characteristics and follow up outcome of PTMC

items	value
Medium age @ diagnosis (y, range)	37 (21-64)
Sex, Female (N) %	93 (75%)
Biggest diameter @ diagnosis (mm, mean ± SD, range)	6.2±0.1(3-10)
Medium follow up duration (m)	52 (12-180)
With thyroiditis (n) %	23 (19%)
Multifocal (n) %	35 (28%)
Close to thyroid capsule (n) %	67 (54%)
Progression during follow up (n) %	10 (8.1%)
Conversion to surgery (n) %	26 (21%)

Table 2. PTMC progression characteristics (n=10)

reasons	Diameter increasing ≥3mm N=7
Initial diameter (mm)	6.0±0.5
Follow up duration (m)	60±7
	LN metastasis N=6
Initial diameter (mm)	6.1±0.6
Follow up duration (m)	48±10

Regarding the tumor progression rate, in this cohort, the 3-year and **5-year progression rate** was 2.1% (95% CI 0-4.9%) and **9.1%** (95%CI 1.6-16.7%) respectively as shown in the fig lower left. Initial tumor size, thyroiditis, multifocal disease or close to thyroid capsule were not predict factor for tumor progression. **Age < 30y was the only risk factor** for tumor progression (p=0.00039) as shown in the fig lower right.



Discussion: comparison of current study and published associated studies was summarized in table below.

study	Japan	USA	Korea	Italy	China, current
N=	3222	219	775	93	124
Median age, y	57	52	49	44	37
Follow-up time	7.3y	25m	39m	19m	52m
Progression rate, %	4.7 (10y)	12.1(5y)	14.2(5y)	3	9.1(5y)

Conclusion: AS appeared safe even in relatively young low risk PTMC patients, however, very young age patients (<30y) should be recommended and monitored with caution.