

Early and more frequent monitoring of thyroid function test post RAI could be beneficial

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Background:

Radioiodine (RAI) is widely used for the treatment of hyperthyroidism. Most patients respond to RAI therapy with a normalization of TFTs and improvement in clinical symptoms within 4–8 weeks. Hypothyroidism may occur from 4 weeks on, with 40% of patients being hypothyroid by 8 weeks and >80% by 16 weeks.

American thyroid association guidelines recommend testing for free T4, total T3, and TSH within the first 1–2 months after RAI. Biochemical monitoring should be continued at 4- to 6-week intervals for 6 months, or until the patient becomes hypothyroid and stable on thyroid replacement therapy. Our local protocol is to monitor thyroid function more frequently and earlier, week 1,3,6,9,12,24 post RAI therapy to avoid any delay in starting treatment if required.

Methods:

79 patients with hyperthyroidism underwent definitive treatment with RAI between January 2012 and June 2017. Monitoring of thyroid function tests were examined retrospectively to determine timing of initiation of treatment for either hypothyroidism or persistent hyperthyroidism post RAI.

Results:

Treatment started for both hypothyroidism and persistent hyperthyroidism in 45/79 patients, 41 developed hypothyroidism while 6 became hyperthyroid. 19/39 developed hypothyroidism within 9 weeks post RAI, while 9/41 developed hypothyroid within 3 weeks post RAI. Median time to commence treatment was 13.6 weeks.

	weeks post RAI therapy							Total
	1	3	6	9	12	24	52	
GD	1	4	2	9	9	7	2	34
MNG				1	1	1		3
TA		5	1			2		8
total	1	9	3	10	10	10	2	45

Table 1: number of patients developed hypo- or hyperthyroidism on weekly basis following RAI therapy.

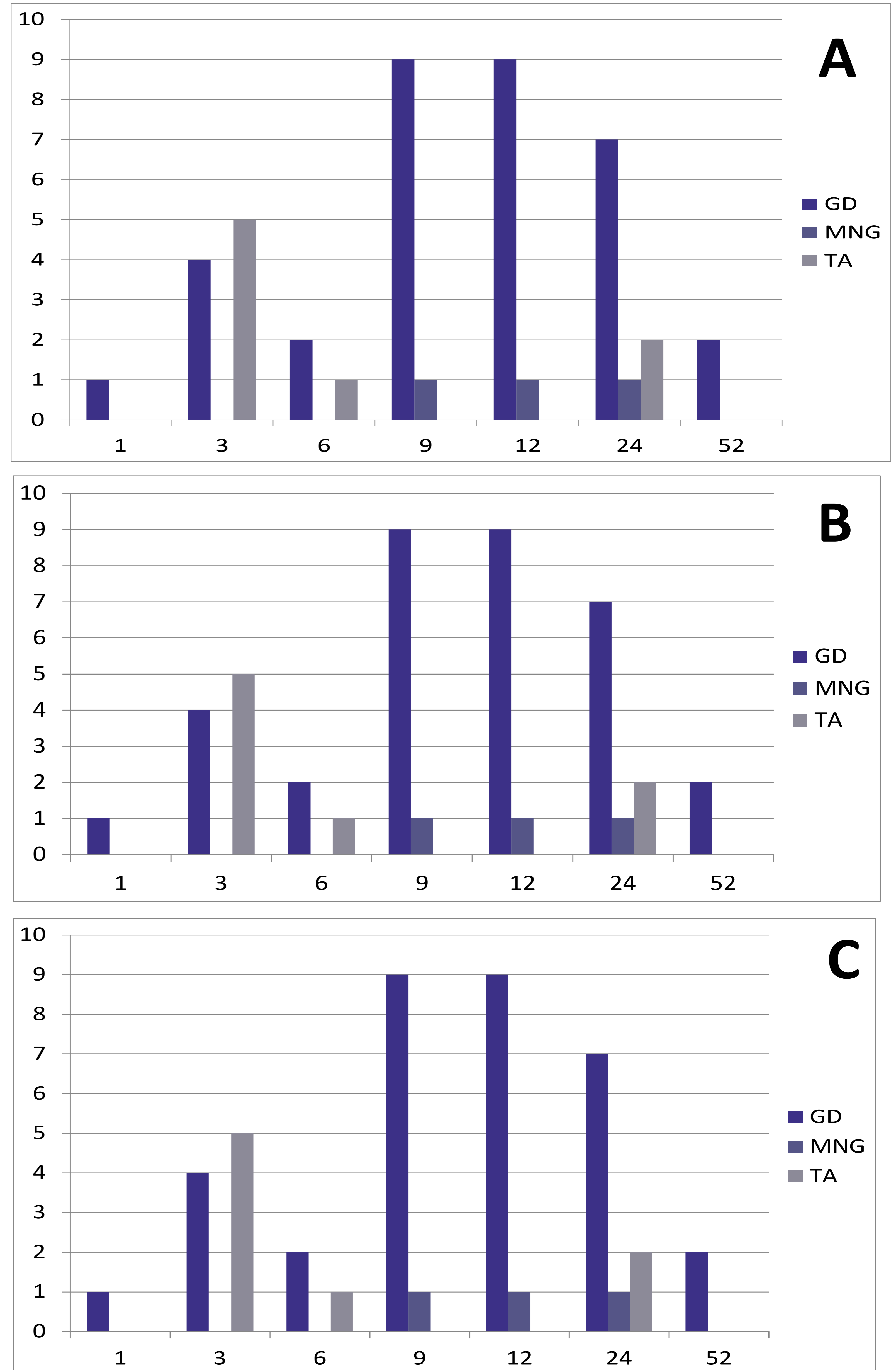


Figure 1: distribution of patients developed hypo- or hyperthyroidism on weekly basis. (A) total patients, (B) patients whom developed hypothyroid, (C) patients whom developed hyperthyroid.

Conclusion:

Frequent early monitoring of thyroid function tests post RAI may avoid delay in starting treatment for patients developed either hypo- or hyperthyroidism as it is done in St. James's Hospital.

References:

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- 3) Franklyn JA, Maisonneuve P, Sheppard MC, Betteridge J, Boyle P (1998) Mortality after the Treatment of Hyperthyroidism with Radioactive Iodine. *N Engl J Med* 338(11): 712-718.