

# Comparison of Block and Replace Regime and Titration Regime in Graves' Disease

Cho Mar

Department of Endocrinology, University of Medicine 1, Yangon, Myanmar

## Abstract

In Graves' disease (GD), medical treatment is still the cornerstone and there were some studies done on comparison of block and replace (B & R) regime and titration regime of the antithyroid drugs (ATDs). In Myanmar, titration regime is mostly practiced for management of GD. It is still debatable as to which of these regimes is better for the management of GD.

## Aim

To compare the proportion of attainment of euthyroid status between block and replace regime and titration regime in patients with recently diagnosed GD

## Methods

A hospital based randomized clinical trial was conducted. A total of 117 patients; 58 patients in B & R regime and 59 patients in titration regime, who met the inclusion criteria were included. The patients were allocated to either regime by using systematic sampling method. B & R regime was defined as a regime when a fixed 40 mg/day of carbimazole (CMZ) was supplemented with 50 mcg/day of levothyroxine at the start of the treatment and then adjusting the dose of levothyroxine later. Titration regime was defined as a regime where CMZ was started as the dose according to free T4 level at diagnosis and the dose was titrated over time to the lowest dose needed to maintain a euthyroid state. At each visit, clinical conditions including side effects and biochemical status (free T4 & TSH) were assessed and the data was analysed at 12 months of treatment.

## Results

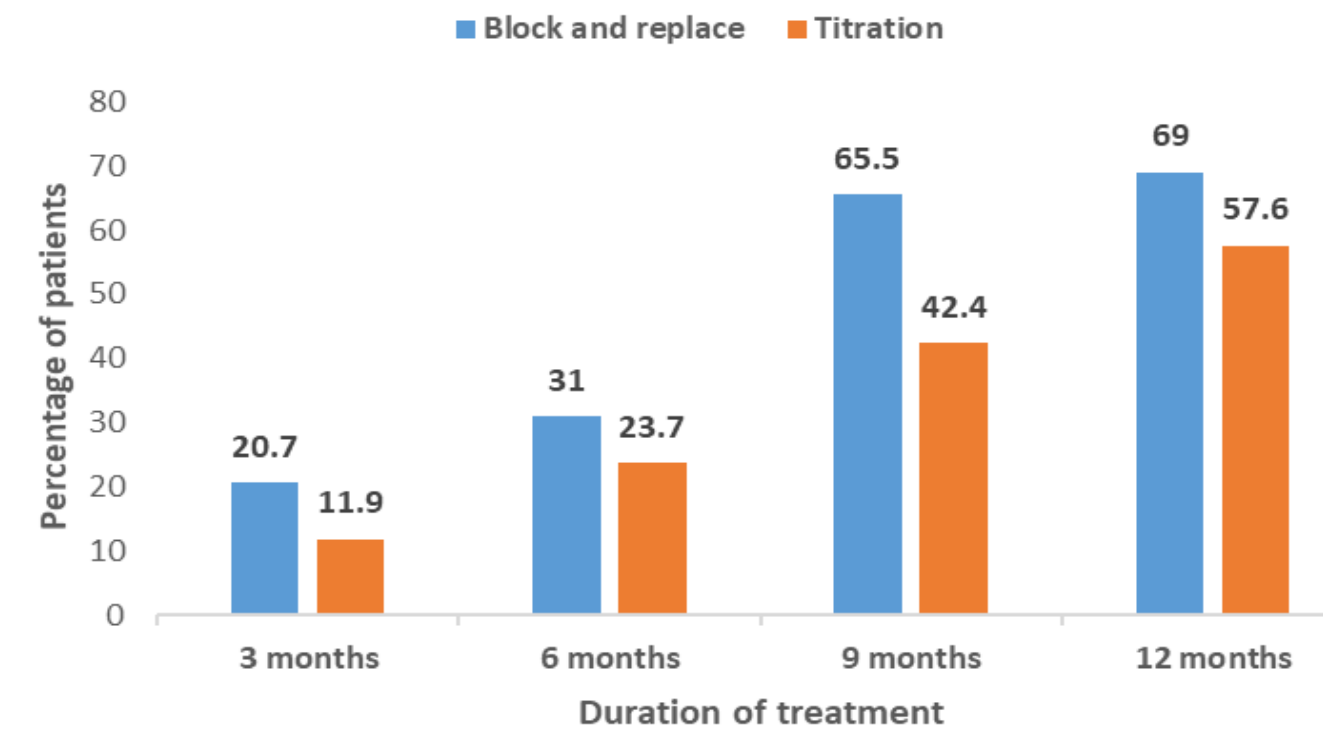
Baseline demographic, clinical characteristics and hormonal levels were compared and found to be similar in both groups.

- At 12 months of treatment, 69% of patients in B & R regime and 57.6% in titration regime had achieved normal euthyroid status. Only 17.2% under B & R regime were still hyperthyroid in contrast to 35.6% under titration regime. On the other hand, 13.8% patients in B & R regime had hypothyroid state compared to 6.8% of those in titration regime.
- Although there was increasing trend of patients with euthyroid result in both regimes during 12 months, there was still no significant difference in attaining euthyroid status between the two regimes at 12 months ( $p = 0.06$ ).
- Regarding side effects of ATDs, skin rash and pruritus were more frequently occurred during the first 3 months of ATDs but no significant difference was noted between the regimes at the end of study. There was also no case of serious side effects such as agranulocytosis and hepatotoxicity during the study period.

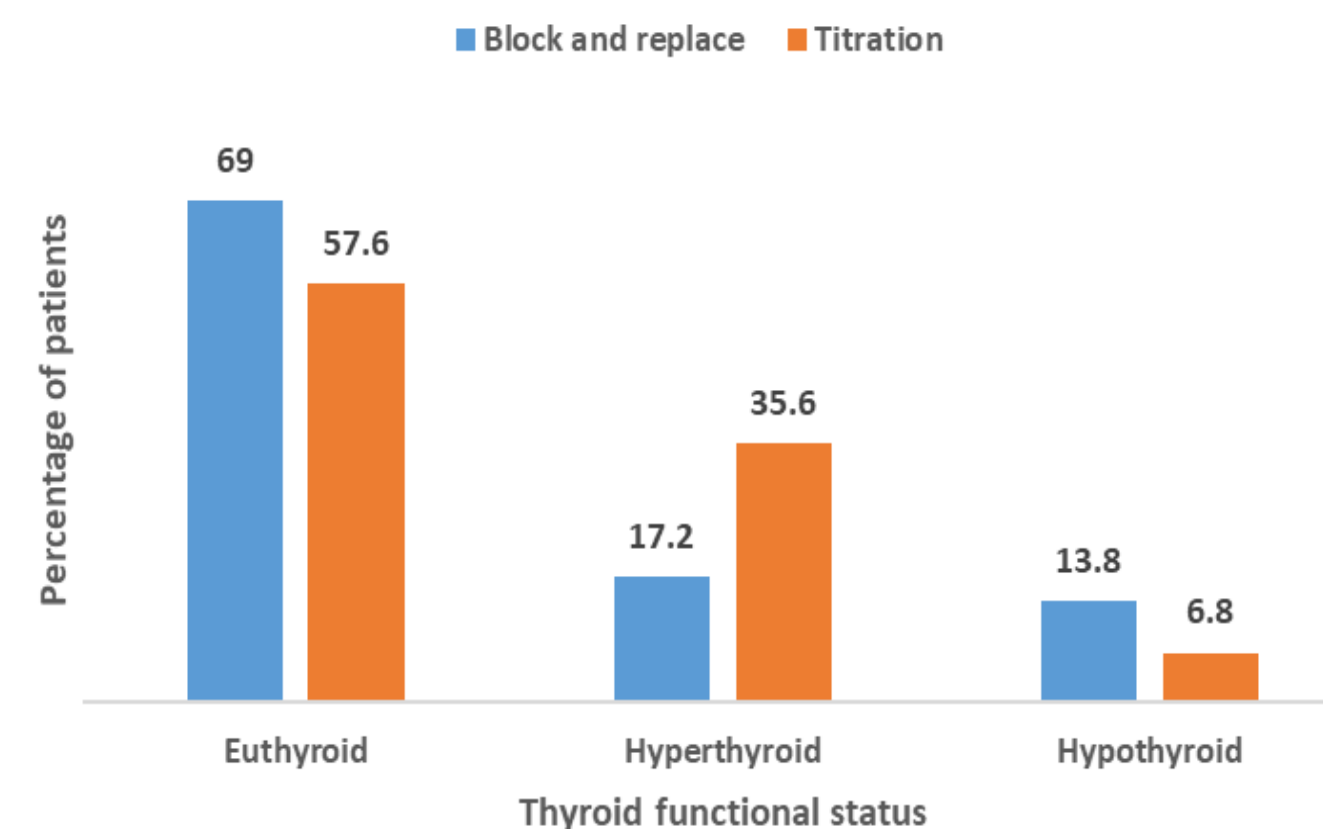
**Table (1) Characteristics of patients at baseline**

Characteristics of patients at baseline	B & R regime (n = 58)	Titration regime (n = 59)
Age in years, range; mean (SD)	19.0 - 69.0; 37.0 (11.62)	19.0 - 67.0; 41.2 (11.92)
Female, (%)	76.6	78
Current/ Ex-smoker, (%)	17.2	23.7
Positive family history of <u>goitre</u> ,(%)	20.7	10.2
BMI(kg/m <sup>2</sup> ), mean(SD)	21.38 (2.77)	21.61 (4.19)
Presence of Graves' ophthalmopathy, (%)	46.2	53.8
FT4 (pmol/L), range; mean(SD)	25.8 - 101.0; 72.76 (24.83)	23.44 - 101.0; 74.05(28.47)
TSH (μIU/L), range; mean(SD)	0.003 - 0.12; 0.015 (0.02)	0.005 - 0.21; 0.014(0.032)
TRAb (IU/L), range; mean(SD)	2.41 - 41.0; 17.85 (11.98)	2.01 - 41.0; 17.86 (12.90)

## Results

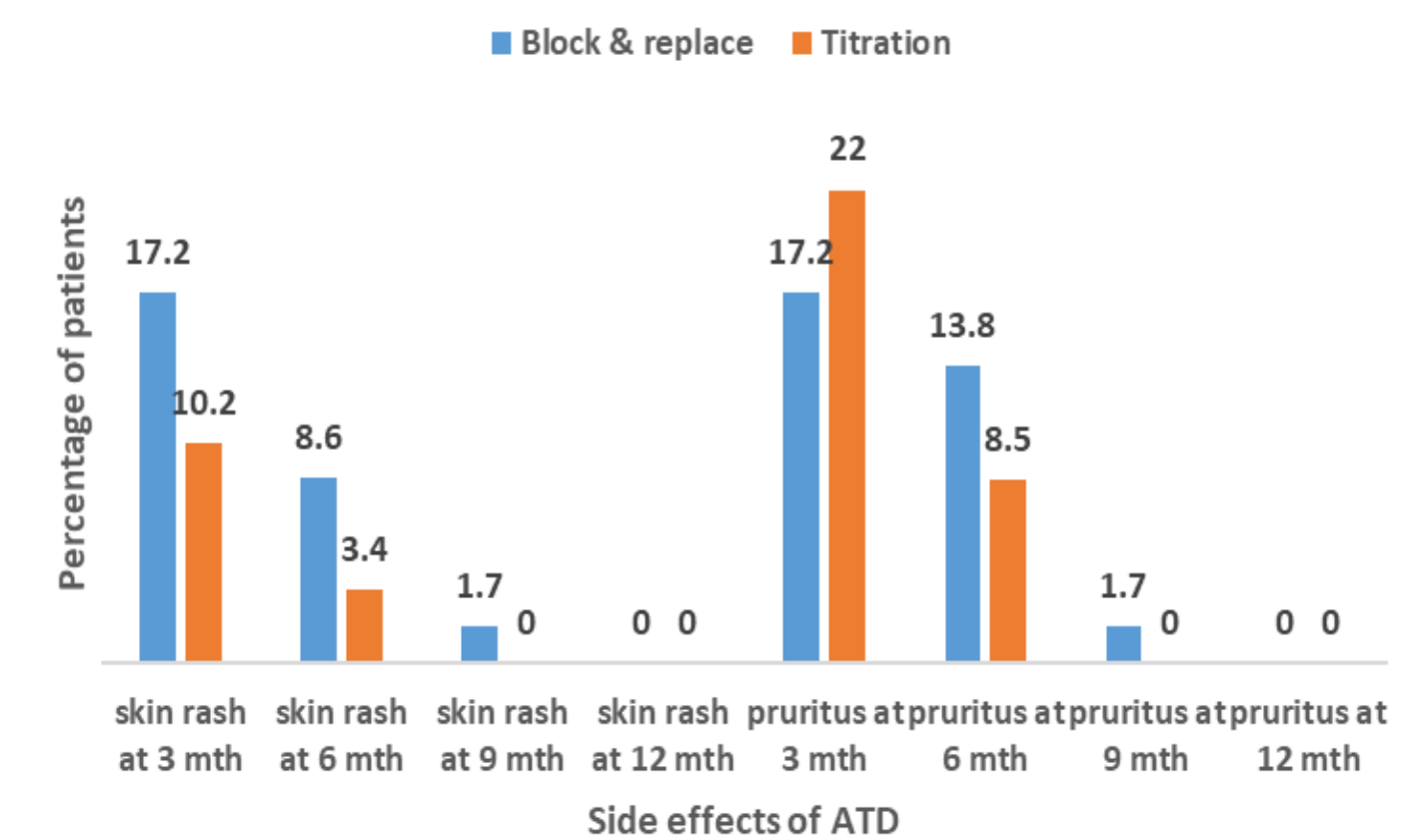


**Figure (1). Euthyroid status during 12 months of treatment**



**Figure (2). Thyroid Functional status at 12 months**

## Results



**Figure (3). Side effects of ATD**

## Conclusion

- The study was found out that B & R regime of ATD was comparable to titration regime to achieve euthyroid status in the expense of similar risk of side effects of ATDs.
- The study had some limitations such as changes in goitre size, impact on quality of life and cost effectiveness to explore.
- Therefore, further prospective studies are needed to better evaluate these regimes for the management of GD in the routine clinical setting.