PRISMA-I

Superior and consistent efficacy of telmisartan over ramipril in reducing ambulatory blood pressure

PRISMA I (Prospective, randomised investigation of the safety and efficacy of telmisartan versus ramipril using ambulatory blood pressure monitoring)

Background

- Early morning hours usually show a sharp rise in blood pressure (BP) associated with awakening.
- The onset of cerebro- and cardiovascular events, such as sudden death, myocardial infarction and stroke follows a similar daily rhythm that maps the peaks and troughs of BP, with the highest incidence during the early morning hours.

Aim

To compare the efficacy of telmisartan and ramipril, in reducing ambulatory BP compared with baseline during the last 6 h of the 24-h dosing interval.

Study design

Prospective, randomized, open-label, blinded-endpoint study

Study patients

801 patients with mild to moderate hypertension

Study groups

- Telmisartan initiated at 40 mg and titrated to 80 mg after 2 weeks
- Ramipril initiated at 2.5 mg for 2 weeks, titrated to 5 mg for 6 weeks and then to 10 mg for a further 6 weeks.

Study duration

Group 1: Telmisartan 80 mg vs. Ramipril 5 mg for 8 weeks
Group 2: Telmisartan 80 mg vs. Ramipril 10 mg for 14 weeks
Results

- Consistently greater reduction in BP throughout the 24-h dosing interval with telmisartan 80 mg compared with ramipril 5 and 10 mg after 8 and 14 weeks of treatment, respectively.

- Superior reduction in mean ambulatory BP during the last 6 h of the dosing interval with telmisartan 80 mg as compared to ramipril 5 mg and 10 mg.

- Greater ambulatory BP response rates in telmisartan-treated patients than among those treated with ramipril 5 and 10 mg.

- Significantly greater reductions in 24-h, morning, daytime and nighttime mean ambulatory BP with telmisartan 80 mg as compared to ramipril 5 mg and 10 mg.
Fewer treatment-related adverse events occurred in patients receiving telmisartan than in those receiving ramipril (6.5% vs. 10.1%). Cough (most commonly reported drug-related adverse event) was reported by 5.7% patients in ramipril group as compared to 0.5% in telmisartan group.

**Conclusion**

- Telmisartan was consistently and significantly more effective than ramipril in controlling BP during the last 6 h of the dosing interval, a time when patients are at greatest risk of cardio and cerebrovascular events.
- Both drugs were equally well tolerated, but telmisartan was associated with fewer instances of cough.

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