Clinical Study Synopsis for Public Disclosure

This clinical study synopsis is provided in line with **Boehringer Ingelheim's *Policy on Transparency and Publication of Clinical Study Data***.

The synopsis - which is part of the clinical study report - had been prepared in accordance with best practice and applicable legal and regulatory requirements at the time of study completion.

The synopsis may include approved and non-approved uses, doses, formulations, treatment regimens and/or age groups; it has not necessarily been submitted to regulatory authorities.

A synopsis is not intended to provide a comprehensive analysis of all data currently available regarding a particular drug. More current information regarding a drug is available in the approved labeling information which may vary from country to country.

Additional information on this study and the drug concerned may be provided upon request based on **Boehringer Ingelheim's *Policy on Transparency and Publication of Clinical Study Data***.

Name of company: Boehringer Ingelheim		**Tabulated Study Report**		
Name of finished product: MICARDIS®				
Name of active ingredient: Telmisartan		**Page:**	**Number:**	
Ref. to Documentation:	**Volume:**	**Page:**		**Addendum No.:**
Report date: 19-Aug-2003	**Number:** U03-1594	**Study period (dates):** 24-April to 15-Aug-2002		

Title of study:	Does telmisartan compared to candesartan due to a distinctly larger volume of distribution exert stronger effects in relevant peripheral tissues, *e.g.* renal and adrenal tissues?
Investigator:	[redacted]
Study center(s):	[redacted], Germany, [redacted]
Publication (reference):	
Clinical phase:	Phase IV
Objectives:	Assess potential different properties of telmisartan, which due to its Vd, should result in stronger "beneficial" effects of AT_1 blockade in tissues (*e.g.* aldosterone suppression and renin increase) plus stronger AT_2 stimulation compared to candesartan.
Methodology:	
No. of subjects:	
planned:	entered: 24
actual:	enrolled: 26
	entered: 24 treated: 24 analysed: 24
Diagnosis and main criteria for inclusion:	Healthy male volunteers, absence of any relevant disease.
Test product:	Telmisartan
dose:	40 mg on days 1 and 2, 80 mg on days 3 - 7
mode of admin.:	repetitive oral dosing
batch no.:	BIBR 277SE TA 30 2A 1F
Duration of treatment:	7 days
Reference therapies:	Candesartan, placebo
dose:	8 mg (halved tablet) on days 1 and 2, 16 mg (full tablet) on days 3 - 7
mode of admin.:	repetitive oral dosing
batch no.:	BIBR 277SE TA 99 1A 16A

Name of company: Boehringer Ingelheim		**Tabulated Study Report**		
Name of finished product: MICARDIS®		**SUPPLEMENTARY SHEET**		
Name of active ingredient: Telmisartan		**Page:**	**Number:**	
Ref. to Documentation:	**Volume:**	**Page:**		**Addendum No.:**
Report date: 19-Aug-2003	**Number:** U03-1594	**Study period (dates):** 24-April to 15-Aug-2002		

Criteria for evaluation:

Efficacy:	Assessment of AT_1 pressor antagonism *in vivo* (DR-1), plasma aldosterone concentration after stimulation with Angiotensin II, plasma renin activity, diastolic blood pressure, TPR via noninvasive cardiac output.
Safety:	Vital signs, laboratory examination, ECG, blood pressure, heart rate.
Statistical methods:	Primary variable, i.e. slope of PRA increase versus DR-1: analysis of variance. Secondary endpoints, i.e., time profiles of DR-1, PRA, TPR and ALD;split-plot model for repeated measurements.

SUMMARY – CONCLUSIONS:

Efficacy results:	Telmisartan and candesartan induced a clear rightward shift of the Ang II dose-response curves for diastolic blood pressure. The maximum antagonistic effects were found at 2 hours after administration of telmisartan and at 8 hours after administration of candesartan. PRA rise after candesartan was more pronounced than after telmisartan. Regarding the blunted increase of ALD following Ang II infusion no differences between both drugs could be found. Telmisartan and candesartan administration to healthy normotensive subjects lowered DBP and TPR to the same extent.
Safety results:	Telmisartan and candesartan were very well tolerated in this trial. Vital signs, ECGs, physical examinations and clinical laboratory safety test results were essentially unchanged. No serious adverse events were reported. Only one subjects experienced headache in connection with medication.
Conclusions:	The antagonistic activities of both substances were strong over 24 hours under chronic administration and the effects at trough with both drugs can be considered adequate to produce a sufficiently intense effect in the clinical situation. The differnces between telmisartan and candesartan which had been supposed from the different volumes of distribution could not be detected in this study.