



Physician connect

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Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you '**Physician connect**' which contains latest and interesting news in the field of Medicine.

This issue contains

- Association of Fatal and Nonfatal Cardiovascular Outcomes With 24-Hour Mean Arterial Pressure
- Effect of ABPM guided antihypertensive treatment on renal progression in patients with CKD
- Necrotizing Enterocolitis- A Case Report

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited

Association of Fatal and Nonfatal Cardiovascular Outcomes With 24-Hour Mean Arterial Pressure

The Global Burden of Disease Study reported that high blood pressure (BP) is the major modifiable cardiovascular risk factor, causing 9.4 million deaths annually, that is, more than half of cardiovascular mortality. Major adverse cardiovascular events are closely associated with 24-hour blood pressure (BP). Melgarejo JD et al. determined outcome-driven thresholds for 24-hour mean arterial pressure (MAP), a BP index estimated by oscillometric devices. Melgarejo JD et al. assessed the association of major adverse cardiovascular events with 24-hour MAP, systolic BP (SBP), and diastolic BP (DBP) in a population-based cohort (n=11 596). Statistics included multivariable Cox



regression and the generalized R² statistic to test model fit. Baseline office and 24-hour MAP averaged 97.4 and 90.4 mm Hg. Over 13.6 years (median), 2034 major adverse cardiovascular events occurred.

Twenty-four-hour MAP levels of <90 (normotension, n=6183), 90 to <92 (elevated MAP, n=909), 92 to <96 (stage-1 hypertension, n=1544), and ≥96 (stage-2 hypertension, n=2960) mm Hg yielded equivalent 10-year major adverse cardiovascular events risks as office MAP categorized using 2017 American

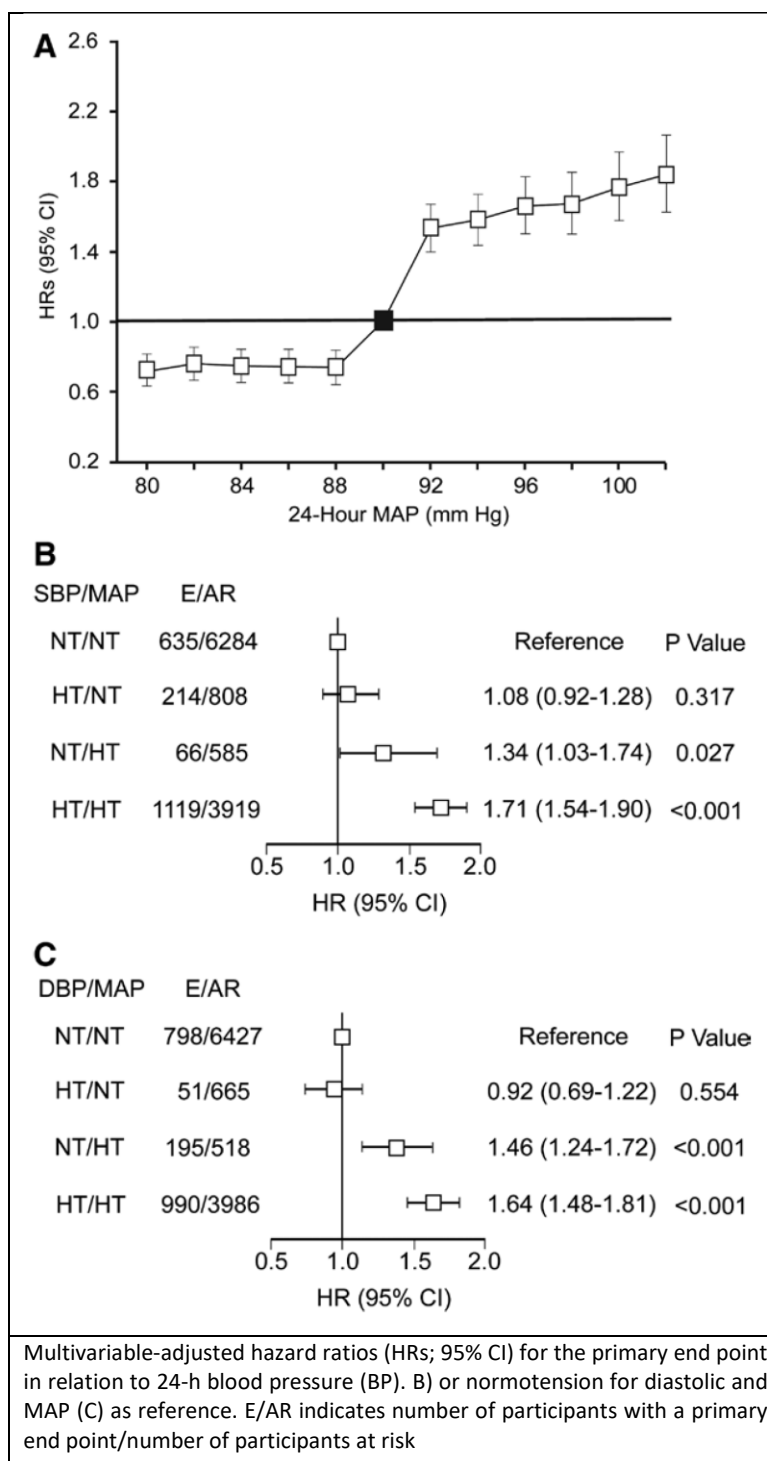
The clinical application of 24-hour MAP thresholds in conjunction with SBP and DBP refines risk estimates.

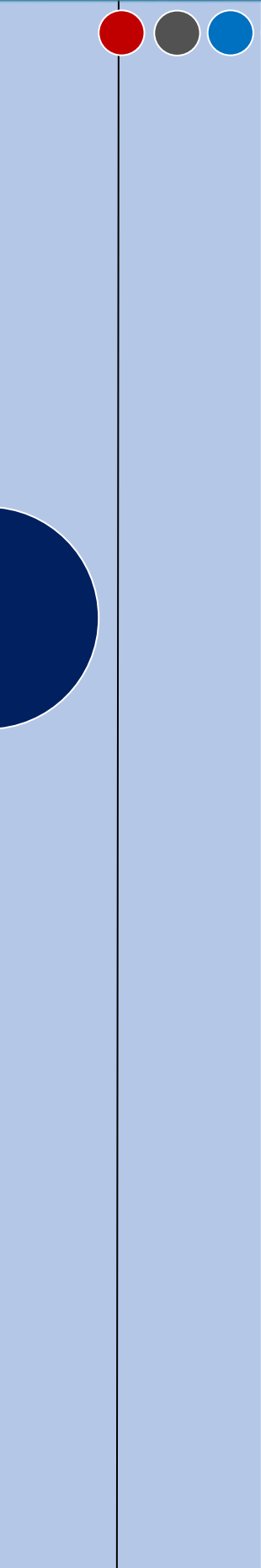
thresholds for office SBP and DBP. Compared with 24-hour MAP

normotension, hazard ratios were 0.96 (95% CI, 0.80–1.16), 1.32 (1.15–1.51), and 1.77 (1.59–1.97), for elevated and stage-1 and stage-2 hypertensive MAP. On top of 24-hour MAP, higher 24-hour SBP increased, whereas higher 24-hour DBP attenuated risk ($P<0.001$). Considering the 24-hour measurements, R² statistics were similar for SBP (1.34) and MAP (1.28), lower for DBP than for MAP (0.47), and reduced to null, if the base model included SBP and DBP; if the

ambulatory BP indexes were dichotomized according to the 2017 American guideline and the proposed 92 mm Hg for MAP, the R² values were 0.71, 0.89, 0.32, and 0.10, respectively. Using a composite cardiovascular end point as primary outcome and the 10-year risks associated with 2017 American College of Cardiology/American Heart Association thresholds for office blood pressure (BP) as reference, we established levels of 24-hour MAP of <90, ≥90 to <92, ≥92 to <96, and ≥96 mm Hg delineated normotension, elevated 24-hour MAP, stage 1 hypertension, and stage 2 combined with severe hypertension, respectively. Combined with 24-hour systolic BP and diastolic BP, 24-

hour MAP kept its prognostic accuracy in categorical and continuous analyses of BP.





The study observations have implications for hypertension management and the use and validation of oscillometric BP measuring devices. Oscillometric BP measuring devices should include MAP in the reports they generate. Considering 24-hour MAP in clinical practice in conjunction with 24-hour systolic BP and diastolic BP might refine risk estimates.

Source: Melgarejo JD et al. Hypertension. 2021;77:39–48. DOI: 10.1161/HYPERTENSIONAHA.120.14929.

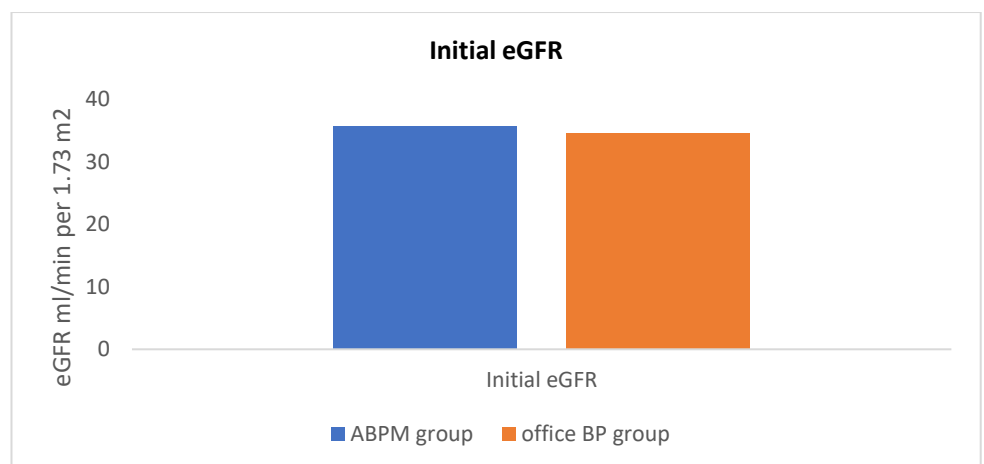
Effect of ABPM guided antihypertensive treatment on renal progression in patients with CKD

Adequate blood pressure (BP) control is pivotal for managing chronic kidney disease (CKD). The optimal approach for monitoring BP to delay CKD progression is not yet clear. Patients with hypertension and CKD stage 3–4 were randomized into ambulatory blood pressure monitoring (ABPM) or office BP groups. All patients had ABPM at baseline and 18 months, and the ABPM group additionally underwent ABPM at 3 and 6 months. Each ABPM result was notified only for the ABPM group.

The present study did not show a beneficial effect of ABPM for controlling hypertension in CKD compared with conventional office BP monitoring in terms of renal outcomes.

The BP target was daytime ABP less than 135/85 mmHg for the ABPM group and office BP less than 140/90 mmHg for the office BP group. The primary outcome was decrease in estimated glomerular filtration rate (eGFR) during 18 months.

A total of 146 patients were randomized into the ABPM (n = 69) and office BP groups (n = 77). Although office BP was comparable in the two groups at baseline, daytime ABP was higher in the ABPM group (median 140 vs. 132 mmHg). Initial eGFR was 35.7 ± 12.5 ml/min per 1.73 m^2 in the ABPM group and 34.6 ± 12.0 ml/min per 1.73 m^2 in the office BP group. eGFR change was -5.5 [95% confidence interval (95% CI) -7.7 to -3.4] ml/min per 1.73 m^2 in the ABPM group and -5.0 (95% CI -6.9 to -3.0) ml/min per 1.73 m^2 in the office BP group ($P = 0.704$). Renal events occurred in 10 patients (15.6%) from the ABPM group and five (7.1%) from the office BP group ($P = 0.120$).

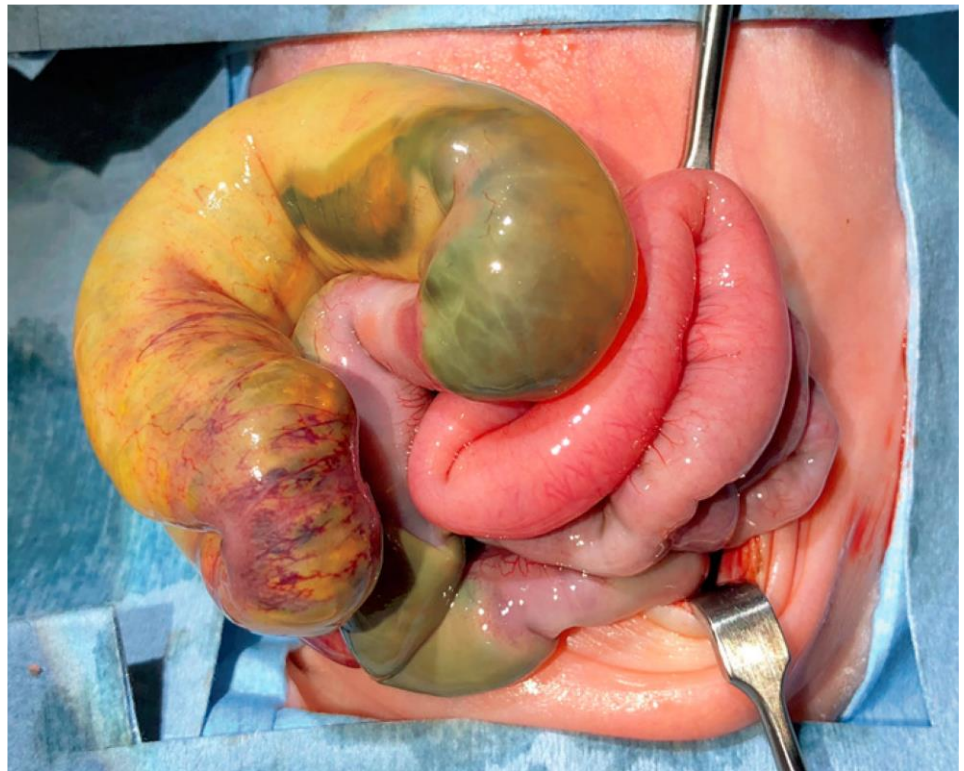


The present study did not show a beneficial effect of ABPM for controlling hypertension in CKD compared with conventional office BP monitoring in terms of renal outcomes.

Source: Yunmi K et al. J Hypertension: 2021. February. 39(2):325-332.
doi: 10.1097/HJH.0000000000002624.

Necrotizing Enterocolitis- A Case Report

Six weeks after premature birth, a female infant who was being treated in the neonatal intensive care unit was found to have severe abdominal distention. She had been born at 23 weeks of gestation by emergency cesarean section because of premature rupture of membranes; her weight was 520 g at birth.



She had been growing well with a combination of enteral feeding and parenteral nutrition. At the time that the abdominal distention developed, plain radiography showed dilated loops of small bowel, and abdominal ultrasonography indicated possible perforation.

Exploratory laparotomy was performed, and a diagnosis of necrotizing enterocolitis was made. Necrotizing enterocolitis is characterized by inflammation of the intestinal mucosa and can result in bowel necrosis

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and perforation; it remains an important cause of complications and death in neonates, especially among preterm infants. The affected bowel segment was resected, and an ileostomy was performed. Four months later, the patient underwent ileostomy reversal and was able to feed fully by mouth at the time of discharge. At the 2-year follow-up, she was growing well.

Source: Kim et al. N Engl J Med 2020 383;25. DOI:-
10.1056/NEJMicm2020782



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