Background: There are 62.4 million diabetics and prevalence of pre diabetes is 77.2 million (ICMR–INDIAB study). Migration from rural to urban areas and rapid socio-economic transition with lifestyle changes would further increase incidence of pre diabetes. The current survey assessed perceptions of diabetes treating physicians across India on lifestyle management, preferred first-line agents in T2DM, treatment targets, and unmet needs in pharmacotherapy and diabetes management. Methods: Survey instrument was a paper based questionnaire with 5 items. 250 physicians participated of which 149 returned filled questionnaires. Results: In newly detected T2DM patients, the most preferred approach was to adopt lifestyle intervention for 3 months before starting pharmacological agents. Metformin was most preferred, followed by Voglibose, DPP-4 inhibitors, with pioglitazone being least preferred agent for first-line treatment of newly detected T2DM patients. Achieving smoking cessation and glycated hemoglobin goals were considered to be the most difficult clinical targets. Postprandial hyperglycemia control, agents to prevent diabetic complications, pancreatic beta cell preservation, obesity treatment, increasing HDL-C and affordable therapeutic agents were common responses elicited as unmet needs in diabetes management. Conclusions: Physicians strongly perceive the need for early adoption of pharmacotherapy in newly detected T2DM agents after 3 months of lifestyle modification. Since, traditional Indian diets are carbohydrate rich which translate into greater prandial glycemic excursion, the role of alpha glucosidase inhibitors is perceived to be even more significant for the early management of T2DM. The existing therapeutic agents have a wide utility to tackle growing burden of diabetes in India.