Seminal plasma is a complex fluid with various components (proteins, enzymes, macro-and microelements, lipids and nutrients) and its role is fundamental for spermatozoa motility, viability and fertilizing capacity maintenance. Many molecules have been measured in seminal plasma to explore some secretion functions of male accessory glands, but effects of biochemical components in human seminal plasma are still debated. Immunoglobulin-free light chains (FLCs) κ and λ are produced by plasma cells in slight excess for the need of immune response and are therefore assayable in blood and in other biological fluids, such as urine, saliva, liquor and synovial fluid. Recently, different biological functions have been attributed to these molecules, suggesting that they are not just a secondary product of immunoglobulin synthesis. No data are reported about presence of FLCs in seminal plasma and their role in physiology of male reproductive system and/or in pathophysiology of infertility. The aims of our study were to investigate the presence and detectability of FLCs in seminal plasma and to evaluate the usefulness of this assay in the diagnostic approach to infertility patients. We enrolled 32 patients aged 19-40 ys, affected by primary infertility; among them, 7 were normospermic (mean±SEM concentration 100.0±16.0 *10^6/ ml; progressive motile forms 39.1±4.9%; normal forms 45.3±4.5%), 25 were oligo- and/or asthenoteratospermic (mean±SEM concentration 23.8±5.4*10^6/ml; progressive motile forms 19.3±4.1%; normal forms 36.0±2.7%); moreover, 17 patients presented II-IV degree varicocele (VAR). After abstinence for 3-5 days, semen samples were collected. FLCs concentrations were assayed by turbidimetric method. Standard semen analysis was performed according to WHO laboratory manual for the examination and processing of human semen, fifth edition, 2010. As main results, independently from sperm count, a significantly difference was observed concerning FLCs concentrations, with higher levels of κ and κ/λ ratio in NO-VAR vs VAR patients (mean±SEM k 36.4±13.2 vs 17.7±9.0 g/l and 7.7±2.9 vs 2.65±0.7, respectively; p<0.05). λ FLCs did not significantly differ between the two groups. This work shows for the first time that FLCs are assayable in seminal plasma, even if their source is to be determined (plasma filtration or local synthesis from lymphoid tissue in accessory gland). Our preliminary data also showed a peculiar pattern with prevalence of k FLCs in infertile patients without VAR, suggesting that FLCs could be in interesting field of investigation in idiopathic infertility. Further studies in large and stratified patients may reveal a possible usefulness of FLCs as a biological marker and/or gain insight about their etiopathogenetic role in male infertility.