Inclusion and Exclusion Criteria All studies included in this review were RCTs.Data Synthesis and Statistical Analysis In this study, the mean value of the AS group minus the mean value of the AT group (mean difference, MD) with the 95% confidence interval (CI) was used to estimate continuous outcomes.Assessment on Risk of Bias and Article Quality We used the risk of bias tool recommended by the Cochrane Collaboration [16] to access the risk of bias on the following six aspects: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessors, incom - plete outcome data, and selective outcome reporting.Databases and Search Strategy The following databases were analyzed: PubMed, Science Direct, the Cochrane Library, the Chinese National Knowledge Infrastructure, and the Wanfang Database, with one or a combination of the following terms: autologous serum, artificial tears, com - parison, random, and randomized.The evaluation indicators must contain at least one of Ocular Surface Disease Index (OSDI), Schirmer I test, tear break-up time (TBUT), fluorescein staining, and rose bengal staining.Outcome Measurement Outcome evaluation included the analysis about subjective symptoms, Schirmer I test, TBUT, fluorescein staining, and rose bengal staining.In this meta-analysis, all extracted data, including OSDI, TBUT, Schirmer I test, fluorescein staining score, and rose bengal staining score, were continuous data and we extracted the mean value and standard deviation (SD).Specifically, we carefully reviewed the studies included and checked whether there was a description of how the random sequence was generated and allocated, whether and how the blinding method was applied, how the outcomes were measured, and whether there were missing data.We defined resolution of DED as the increase of Schirmer I, extension of TBUT, the decrease of OSDI, fluorescein staining score, and rose bengal score.For example, if the random sequence was generated using a random number table or pseudo-random numbers using statistical software, the risk of bias was assessed as "low" level; otherwise, if there was evidence showing that the random sequence was generated in an inappropriate way, the risk of bias on random sequence generation was assessed as a "high" level. If no information could be obtained or it was difficult to make a judgment, the risk of bias was assessed as "unclear."Studies would be excluded if the study design was not RCT or subjects or intervention measurement did not meet the inclusion criteria.Besides, if the original quantitative data of effectiveness of AS or AT was not extractable or the appraisal system could not be combined with other studies, the study would be excluded.Subjective symptoms were measured by OSDI, which is the most extensively used questionnaire for DED.Schirmer I test was performed using a strip placed in the lower conjunctival sac for 5 min without anesthesia.Briefly, the cornea was horizontal divided into three equal compartments, and each zone was graded from 0 to 3.Details of the search strategy are available in online supplementary Appendix 1 (see www.karger.com/doi/10.1159/000505630).The subjects were DED patients, regardless of the participants' age or sex or etiology of disease.For fluorescein staining, we analyzed studies which used same graded system.For rose bengal staining, we analyzed stud - ies using rose bengal 1% and a scale of 9 points.The publication date was from the creation of the databases to December 31, 2018.Data Extraction We extracted data of outcomes measured at the last follow-up time.All the analyses were conducted with the opensource R program (version 3.4.4).The intervention measurement should be AS therapy, and the control group should be given AT treatment, with or without combination of other

therapy.TBUT was the average of two or three measurements.Before estimating the p