Comment on: Diagnostic accuracies of sialography and salivary ultrasonography in Sjögren's syndrome patients: a meta-analysis

G.G. SONG and Y.H. LEE
Clin Exp Rheumatol 2014; 32: 516-22.

Sirs,

With great interest we have read the recently published meta-analysis by Song and Lee in July 2014 (1) in your journal regarding the diagnostic properties of sialography and salivary ultrasonography in Sjögren's syndrome (SS) patients. A systematic review and meta-analysis on this topic has been lacking so far from the literature and thus eagerly expected. We would like to express some concerns regarding Table I of their study in relation to the study outcomes. There seems to be a discrepancy between the data shown in the meta-analysis and the data presented by the source studies (Tagaki *et al*. 2010, ref. 2; Obinata *et al*. 2010, ref. 3; Poul *et al*. 2008, ref. 4; Salaffi *et al*. 2008, ref. 5; Yonetsu *et al*. 2002, ref. 6; Yoshiura *et al*. 1997, ref. 7; Table 1), viz.:

1. In the study of Tagaki *et al*. 2010, the number of cases with SS is 188 as opposed to 177 reported by Song and Lee.
2. In the study of Obinata *et al*. 2010, the number of cases with SS is 36 as opposed to 32 reported by Song and Lee.
3. In the study of Poul *et al*. 2008, which is erroneously cited as Poul *et al*. 2009, the number of cases with SS is 45 as opposed to 32 reported by Song and Lee.
4. In the study of Salaffi *et al*. 2008, the number of cases with SS is 77 as opposed to 68 reported by Song and Lee.
5. In the study of Yonetsu *et al*. 2002, the number of cases is 171 as opposed to 151 reported by Song and Lee.
6. In the study of Yoshiura *et al*. 1997, the number of cases with SS is 24 as opposed to 23 and the number of controls is 40 and 41 depending on the diagnostic technique tested, as opposed to 21 reported by Song and Lee.

In addition, summing the numbers of true positives, true negatives, false positives and false negatives in Table I of Song and Lee's paper does not add up to the same numbers. It is possible that the data set was not complete for every participant in the source studies. See, for example, the study of Yoshiura *et al*. 1997 in which data of 2 control groups were used with different numbers for sialography and ultrasonography. Furthermore, some source studies do not report the number of true positives, true negatives, false positives and false negatives. If Song and Lee calculated the number of true positives, true negatives, false positives and false negatives on basis of the reported sensitivity and specificity of the source populations, it is essential that the correct number of participants with SS and the number of controls in the various studies is entered in the calculations. Finally, Song and Lee report that discrepancies between reviewers were resolved by consensus or a third reviewer. However, they fail to present who the third reviewer was (it might be that there were no discrepancies that could not be resolved by consensus, so there was no need for a third reviewer) and do not report interobserver agreement measures.

We were wondering which numbers were entered into the statistical program to perform the meta-analyses, since these numbers influence the outcome of the study. We would appreciate if the authors could comment on the above raised issues.

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Competing interests: none declared.

References

1. SONG GG, LEE YH: Diagnostic accuracies of sialography and salivary ultrasonography in Sjögren's syndrome patients: a meta-analysis. *Clin Exp Rheumatol* 2014; 32: 516-22.
2. TAKAGI Y, KIMURA Y, NAKAMURA H, SASAKI M, EGUCHI K, NAKAMURA T: Salivary gland ultrasonography: can it be an alternative to sialography as an imaging modality for Sjögren's syndrome? *Ann Rheum Dis* 2010; 69: 1321-4.
3. OBINATA K, SATO T, OHMORI K, SHINDO M, NAKAMURA M: A comparison of diagnostic tools for Sjögren syndrome, with emphasis on sialography, histopathology, and ultrasonography. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2010; 109: 129-34.
4. POUL JH, BROWN JE, DAVIES J: Retrospective study of the effectiveness of high-resolution ultrasound compared with sialography in the diagnosis of Sjogren's syndrome. *Dentomaxillofac Radiol* 2008; 37: 392-7.
5. SALAFFI F, CAROTTI M, IAGNOCCO A *et al*.: Ultrasonography of salivary glands in primary Sjögren's syndrome: a comparison with contrast sialography and scintigraphy. *Rheumatology* (Oxford) 2008; 47: 1244-9.
6. YONETSU K, TAKAGI Y, SUMI M, NAKAMURA T, EGUCHI K: Sonography as a replacement for sialography for the diagnosis of salivary glands affected by Sjögren's syndrome. *Ann Rheum Dis* 2002; 61: 276-7.
7. YOSHIURA K, YUASA K, TABATA O *et al*.: Reliability of ultrasonography and sialography in the diagnosis of Sjögren's syndrome. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1997; 83: 400-7.

Table I. Overview of the data presented in the source publications and the data presented by Song and Lee.

Source publications	Data from source papers			Data reported by Song and Lee (2014)			Sialography					Ultrasonography				
	SS	CO	SUM SS and CO	SS	CO	SUM SS and CO	TP	FP	FN	TN	SUM sialography	TP	FP	FN	TN	SUM ultrasonography
Takagi *et al*., 2010	188	172	360	177	172	349	146	31	42	141	360	154	50	34	122	360
Obinata *et al*., 2010	36	37	73	32	37	69	30	2	6	35	73	28	8	8	29	73
Poul *et al*., 2008	45	15	60	37	15	52	35	2	10	13	60	38	4	7	11	60
Salaffi, 2008	77	79	156	68	79	147	56	12	21	67	156	58	13	19	66	156
Yonetsu *et al*., 2002	171	123	294	151	123	274	149	2	30	121	302	130	7	41	116	294
Yoshiura *et al*., 1997				23	21	44										
- Sialography	24	40*	64				23	0	1	21	45					
- Ultrasonography	24	41**	65									11	1	13	21	46

SS: Sjögren syndrome patients; CO: Controls; TP: true positive; FP: False positive; FN: False negative; TN: True negative. *19 with non-specific parotitis + 21 healthy volunteers; **19 non-specific parotitis 20 healthy volunteers.