Merit of journal article tag suite (JATS) XML production of journal for literature databases

M2community

By Younsang Cho

Table of Contents

Merits and Demerits of XML

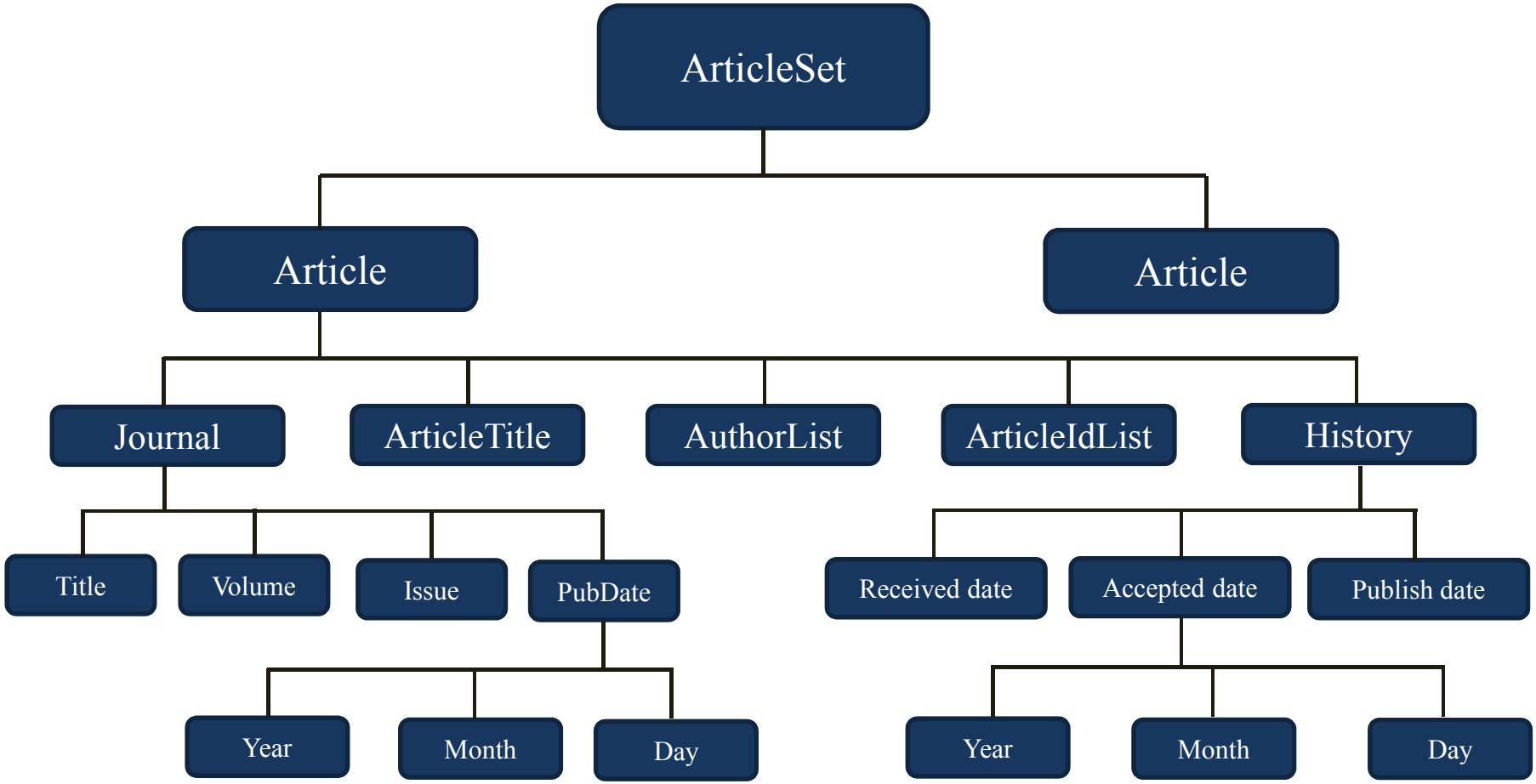
- Merit of XML
  - ✓ Simplicity
  - ✓ Compatibility
  - ✓ Extendability
  - ✓ Recognizable Context Information
  - ✓ Separation between Content and Expression
  - ✓ Simple Comparison and Calculation of Data

- Demerit of XML
  - ✓ It is necessary to define too much to describe simple and special data.
  - ✓ XML document is compatible because it is text file, but it forms big files and is slow at processing.

XML is data manipulation language that has many benefits compared to disadvantages, and it is easy to be interconverted and distributed.

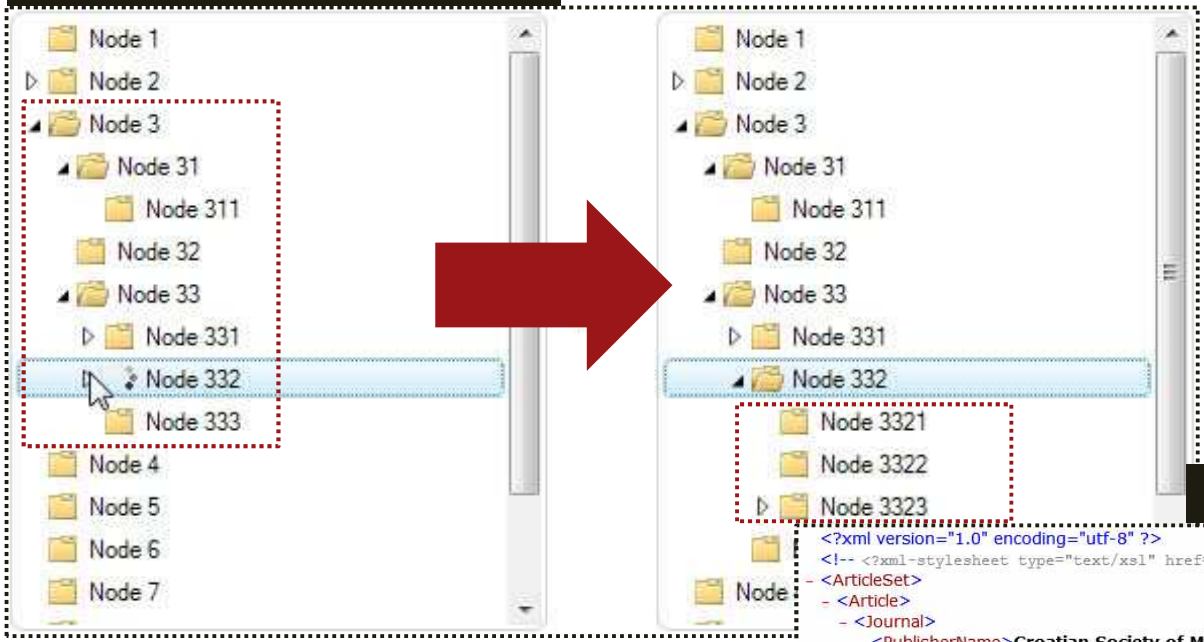
XML “Tree structure”

XML documents form a tree structure that starts with "the root" and branches to "the leaves".



Example of XML “Tree structure”

Folder shows “tree structure”



XML Document shows “tree structure”

```
<?xml version="1.0" encoding="utf-8" ?>
<!-- <?xml-stylesheet type="text/xsl" href="pubmed_list.xsl" ?> -->
- <ArticleSet>
  - <Article>
    - <Journal>
        <PublisherName>Croatian Society of Medical Biochemistry and Laboratory Medicine</PublisherName>
        <JournalTitle>Biochemia Medica</JournalTitle>
        <Issn>1846-7482</Issn>
        <Volume>24</Volume>
        <Issue>1</Issue>
      - <PubDate>
          <Year>2014</Year>
          <Month>2</Month>
        </PubDate>
      </Journal>
      <ArticleTitle>Biochemia Medica indexed in PubMed Central (PMC)</ArticleTitle>
      <FirstPage>5</FirstPage>
      <LastPage>5</LastPage>
      <Language>EN</Language>
    - <AuthorList>
      - <Author>
          <FirstName>Ana-Maria</FirstName>
          <LastName>Simundic</LastName>
          <Affiliation>Editor-in-chief, Biochemia Medica , Zagreb, Croatia</Affiliation>
        </Author>
      </AuthorList>
```

What is XSL?

What is XSL?

Stands for E**X**tensible **S**tylesheet **L**anguage

- Style sheet language for XML documents

The following table shows difference between CSS and XSL

CSS (Style Sheets for HTML)	XSL (Style Sheets for XML)
uses predefined tags	**does not** use predefined tags
each tag is well understood	each tag is **not well** understood
browser knows how to display it	browser **does not** know how to display it

XSL describes how XML document is displayed!

What is CSS?

What is CSS?

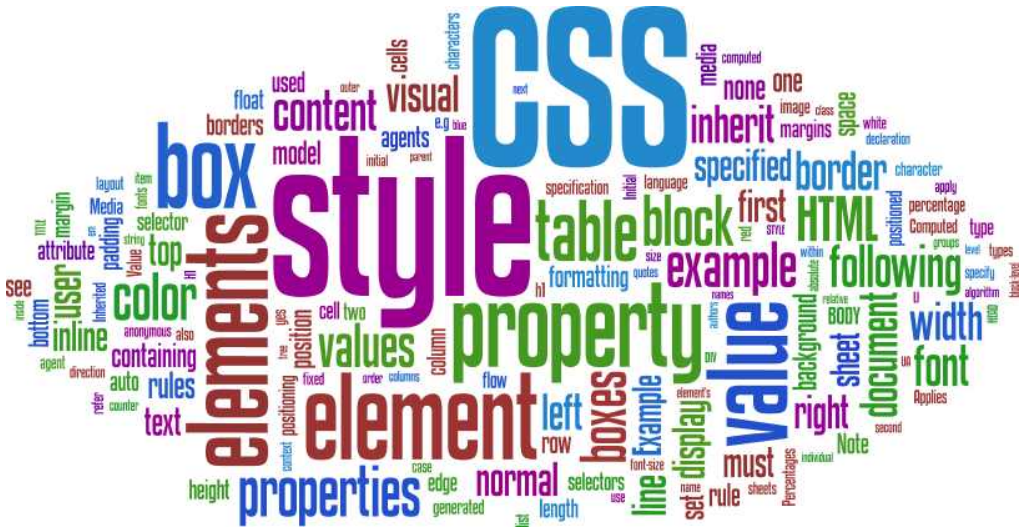
- It stands for **C**ascading **S**tyle **S**heets

✓ Styles define **how to display** HTML elements

✓ Styles were added to HTML 4.0 **to solve a problem**

✓ **External Style Sheets** can save a lot of work

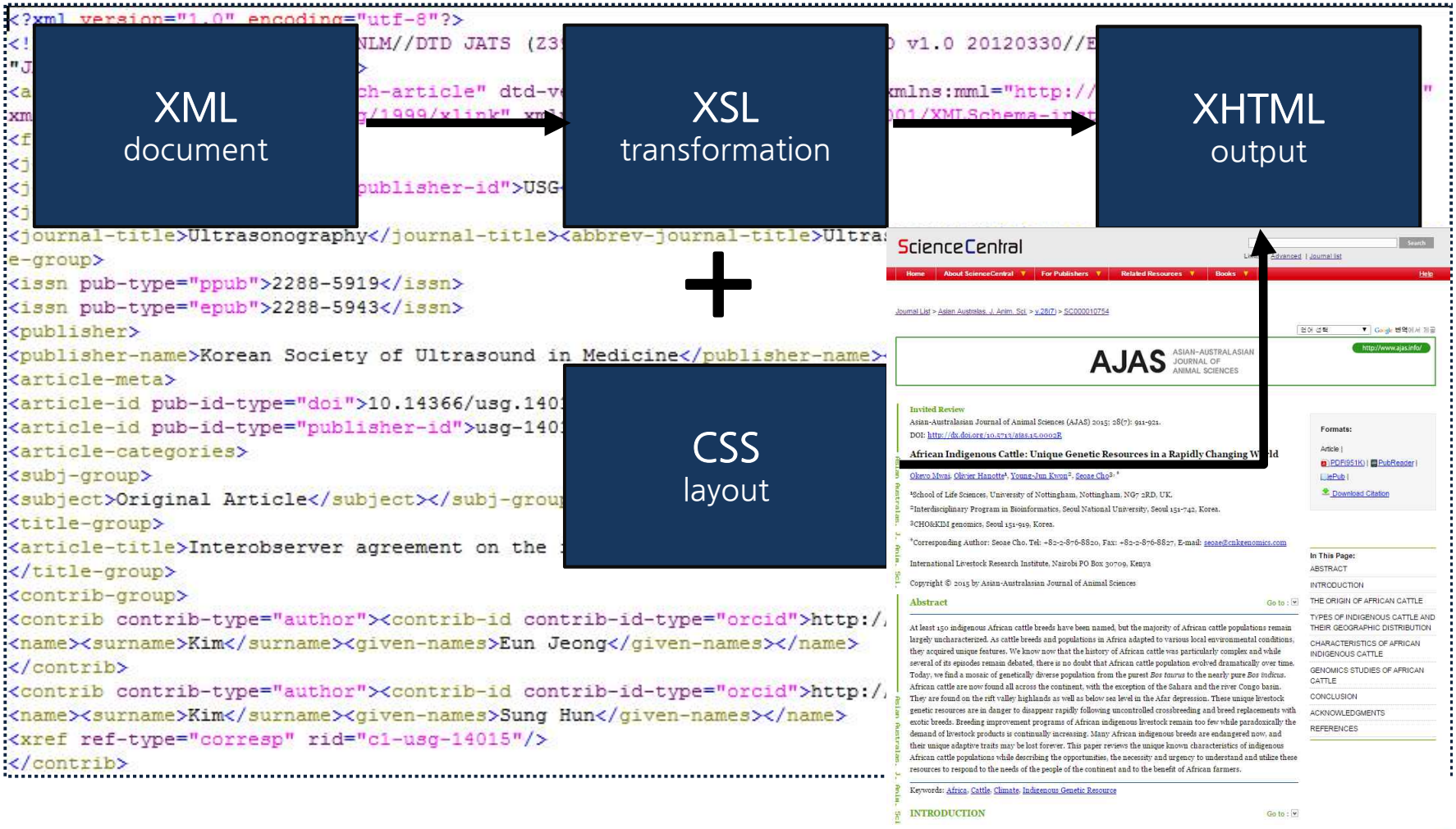
✓ External Style Sheets are stored in **CSS files**



What is CSS. Available from : http://www.shehairakoeiman.com/what-is-css/. [cited-by 2015 July 30]

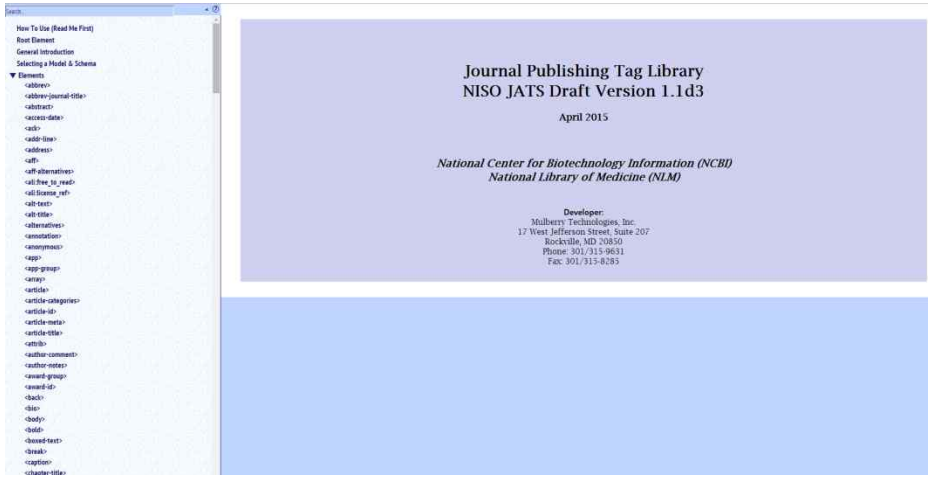
XML, XSL and CSS?

The following shows the relationship between XSL and CSS files



JATS XML?

- What is JATS(Journal Article Tag Suite) XML ?
  - ✓ year 2003 NLM 1.0
  - ✓ year 2004 NLM 2.0
  - ✓ year 2008 NLM 3.0
  - ✓ year 2012 JATS 1.0 (NLM 3.1) - ANSI/NISO Z39.96-2012
  - ✓ April 2015 NISO JATS Draft Version 1.1d3
  - ANSI (American National Standards Institute)
  - NISO (National Information Standards Organization)
- Tag Sets
  - ✓ Journal Archiving and Interchange
  - ✓ Journal Publishing
  - ✓ Article Authoring
- JATS Extensions
  - ✓ Book Interchange Tag Suite (BITS)



JATS - Journal Publishing Tag Library

Elements (263 elements) – April, 2015

Journal Publishing Tag Library NISO JATS Draft Version 1.1d1

- Root Element
- General Introduction
- Selecting a JATS Model and Expression Language
- Elements
  - <abbrev>
  - <abbrev-journal-title>
  - <abstract>
  - <access-date>
  - <ack>
  - <addr-line>
  - <address>
  - <aff>
  - <aff-alternatives>
  - <alt-text>
  - <alt-title>
  - <alternatives>
  - <annotation>
  - <anonymous>
  - <app>
  - <app-group>
  - <array>
  - <article>
  - <article-categories>
  - <article-id>
  - <article-meta>
  - <article-title>
  - <attrib>
  - <author-comment>
  - <author-notes>

Attributes

- Elements
- Attributes
  - abbr
  - abbrev-type
  - abstract-type
  - align
  - alt
  - altimg
  - alttext
  - alt-title-type
  - arrange
  - article-type
  - award-type
  - axis
  - baseline
  - baseline-shift
  - border
  - calendar
  - cellpadding
  - cellspacing

Type or kind of article (for example, “research”, “commentary”, “review”, “case”, or “calendar”).

<article xml:lang="en" article-type="research-article">

<article xml:lang="en" article-type="review-article">

<article xml:lang="en" article-type="case-report">

<article xml:lang="en" article-type="editorial">

article-type Type of Article

Type or kind of article (for example, "research", "commentary", "review", "case", or "calendar").

Usage

This attribute can be used to attach information classes to articles for grouping or searching. An archive may use this, for example, to preserve the publisher's classification of an article.

Use for primary article — When the article is a commentary on another article (for example, a correction or addendum), this attribute contains metadata concerning the commentary itself; it does *not* define the kind of article that is being corrected or amended.

Remarks

Best Practice: When possible, articles should be assigned types, that is, this attribute should used on the <article> element to provide typing information for retrieval or record keeping. Many publishers indicate the type of article, either in an attribute like this one, or with unique element declarations (such as "<review>" or "<calendar>"), and this attribute has been designed to preserve that information. If the article is not one of the listed types or the type of article cannot be determined, the "other" attribute value may be used, or the attribute may be omitted.

Structure of JATS XML

Front

<journal meta></journal meta >
<journal title></journal title >
<issn>:pISSn/eISSN</issn>
<publisher></publisher>
<article meta></ article meta >
<article-id pub-id-type></ article-id pub-id-type>
<article categories></article categories >
<title group></title group>
<contrib-group>
<name><surname></surname>
<given-names></given-names></name>
<aff>: 저자소속</aff>
<pub-date pub-type>
<permissions></permission>
<license-type></license-type>
<abstract></abstract>
<keyword></keyword>

Body

<sec-sec-type="intro"></sec>
<sec-sec-type="methods"></sec>
<sec-sec-type="results"></sec>
<sec-sec-type="conclusion"></sec>
<sec-sec-type="discuss"></sec>
<sec-sec-type="other"></sec>

Back

<fn-group>: figure
<ref-list>
<title>
<ref-id>
<element-citation publication-
type="journal">
</element-citation>
<person-group person-group-
type="author">
<name><surname></surname>
<given-names></given-names></name>
</person-group>
<article-title></article-title>
<source></source>
<year></year>
<volume></volume>
<fpage></fpage>
<lpage></lpage>
<comment></comment>

JATS XML + XSL + CSS

Bibliography and Body

Original Article

Sci Ed 2014; 1(1): 27-36. http://dx.doi.org/10.6087/kcse.2014.1.27

Correlati international : 국가 간의, 국제적인, 국제 관계의, 국제상의 an scientific journals listed in international databases

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1
Cited By

Abstract

Go to :

We would like to verify the correlation among various citation indicators of 62 Korean scientific journals listed in the Web of Science (WoS) and Scopus. From a total of 85 Korean journals listed in both WoS as of January 2013, and 132 journals listed in Scopus as of 2011, 62 Korean journals listed in both citation indices were selected for analysis. Citation index indicators selected for analysis include impact factor (IF), 5-year impact factor (5yrIF), Eigenfactor score (EF), article influence score (AIS) (list of WoS indicators), SCImago journal rank (SJR), h-index, and impact index (ImIndex) (list of Scopus indicators). It took an average of eight years for a newly founded journal to be listed in Science Citation Index Expanded (SCIE). Since the IF, ImIndex, and AIS values failed to exceed 1.0, Korean journals' popularity and prestige were confirmed to be minimal. Analyzed journals that were written in English exhibited higher SJR and h-index values than ones written in Korean. WoS' IF exhibited a correlation with WoS' 5yrIF, EF, AIS, and Scopus' SJR, h-index, and ImIndex. Since the 'popularity and prestige of Korean journals' have been confirmed to be minimal, steps must be taken to improve this status. Popularity-based indicators have been shown to strongly correlate with prestige-based indicators in Korean science journals. Therefore, there must be a strategic approach taken to improve IF values.

Keywords: Bibliometrics; Impact factor; Science journals; Korea

TOOLS

PDF Links

PubReader

Table/Figure

		Second-line therapy	Third-line therapy
Estramustine	245 (63.8)	15 (8.9)	18 (22.2)
Docetaxel	91 (23.7)	84 (49.7)	16 (19.8)
Mitoxantrone	39 (10.2)	52 (30.8)	28 (34.6)
Vincristine + cyclophosphamide	5 (1.3)	13 (7.7)	12 (14.3)
Etc.	4 (1.0)	5 (2.9)	10 (11.9)
Total	384 (100)	169 (100)	84 (100)

[1] Values are presented as number (%).

2. Serum PSA response

Overall PSA responses (>50% PSA decline in pretreatment PSA following chemotherapy) were as follows: 43.5% at first-line chemotherapy, 42.4% at second-line chemotherapy, and 32.1% at third-line chemotherapy (Fig. 1). Declines in serum PSA levels of at least 50% occurred more frequently after treatment with docetaxel and estramustine than after treatment with mitoxantrone but this was not significant (P=0.615) at first line chemotherapy. However, at second- and third-line chemotherapy, PSA responses were significantly more frequently demonstrated in the docetaxel and estramustine groups compared with the mitoxantrone group (second, P= 0.017; third, P=0.010). When PSA responses were analyzed based on the year 2004, there was no statistically significant difference (first, 47.9% vs. 42.1%, P=0.193; second, 26.9% vs. 45.3%, P=0.062; third, 33.3% vs. 31.9%, P=0.631).

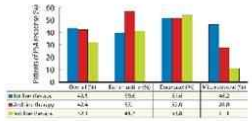


Fig. 1.
Prostate-specific antigen (PSA) responses (>50% PSA decline in pretreatment PSA following chemotherapy) according to chemotherapy agents at first-, second- and third-line chemotherapy.

Reference

1. Kim SJ, Kim SI. Incidence, epidemiology and patterns of progression of prostate cancer. J Korean Med Assoc. 2010; 53:92-7.

2. Scher HI, Fizazi K, Saad F, Taplin ME, Sternberg CN, Miller K, et al. Increased survival with enzalutamide in prostate cancer after chemotherapy. N Engl J Med. 2012; 367:1187-97.

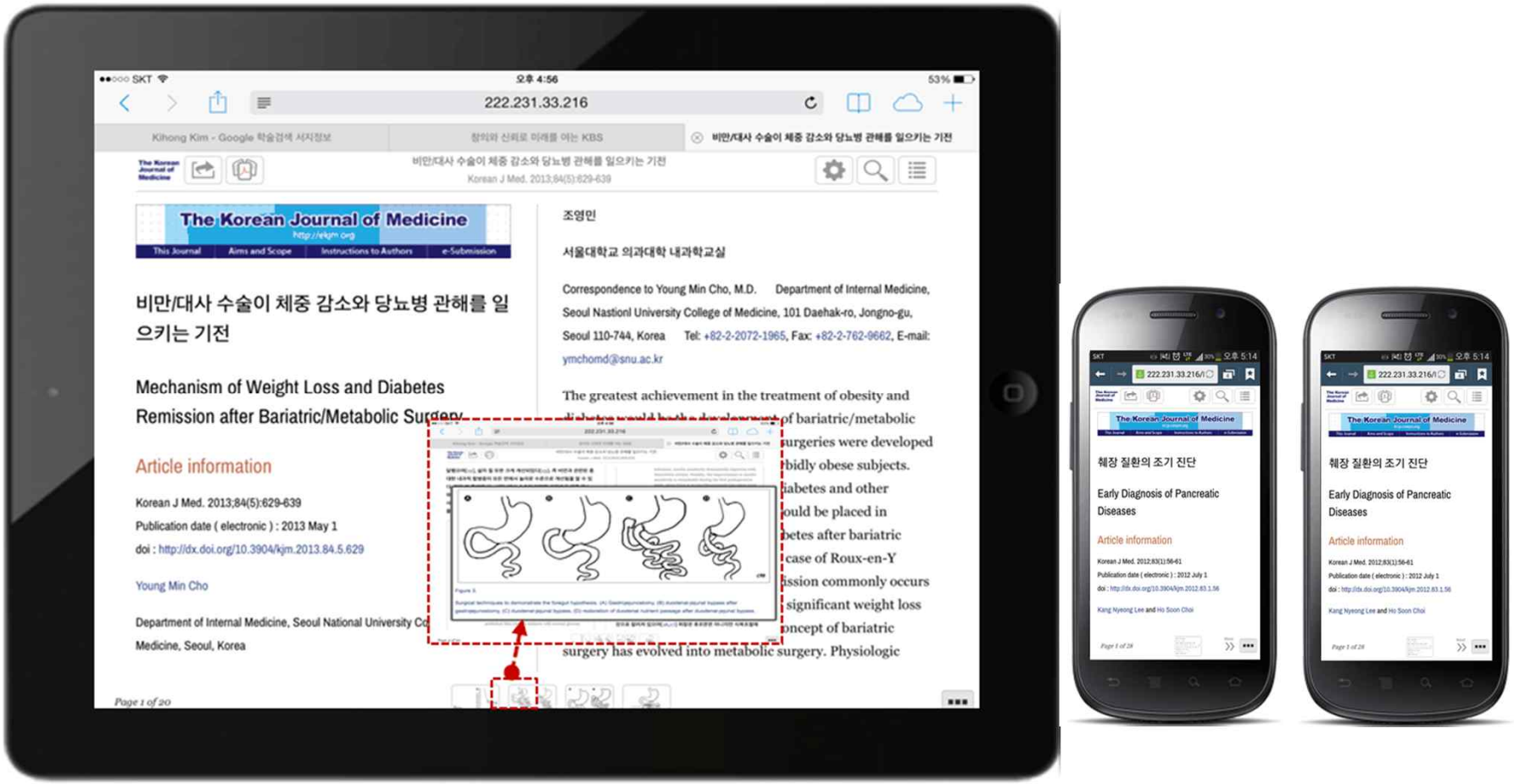
3. de Bono JS, Logothetis CJ, Molina A, Fizazi K, North S, Chu L, et al. Abiraterone and increased survival in metastatic prostate cancer. N Engl J Med. 2011; 364:1995-2005.

4. de Bono JS, Oudard S, Ozguroglu M, Hansen S, Machiels JP, Kocak I, et al. Prednisone plus cabazitaxel or mitoxantrone for metastatic castration-resistant prostate cancer progressing after docetaxel treatment: a randomised open-label trial. Lancet. 2010; 376:1147-54.

5. Tannock IF, de Wit R, Berry WR, Horti J, Pluzanska A, Chi KN, et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. N Engl J Med. 2004; 351:1502-12.

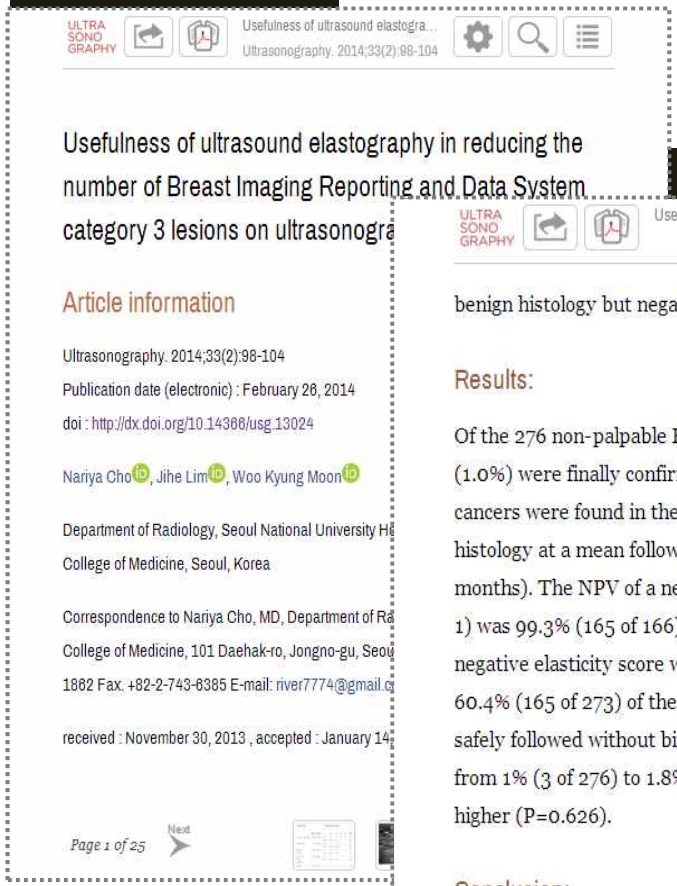
JATS XML to PubReader (Smart Devices)

iPad / Mobile

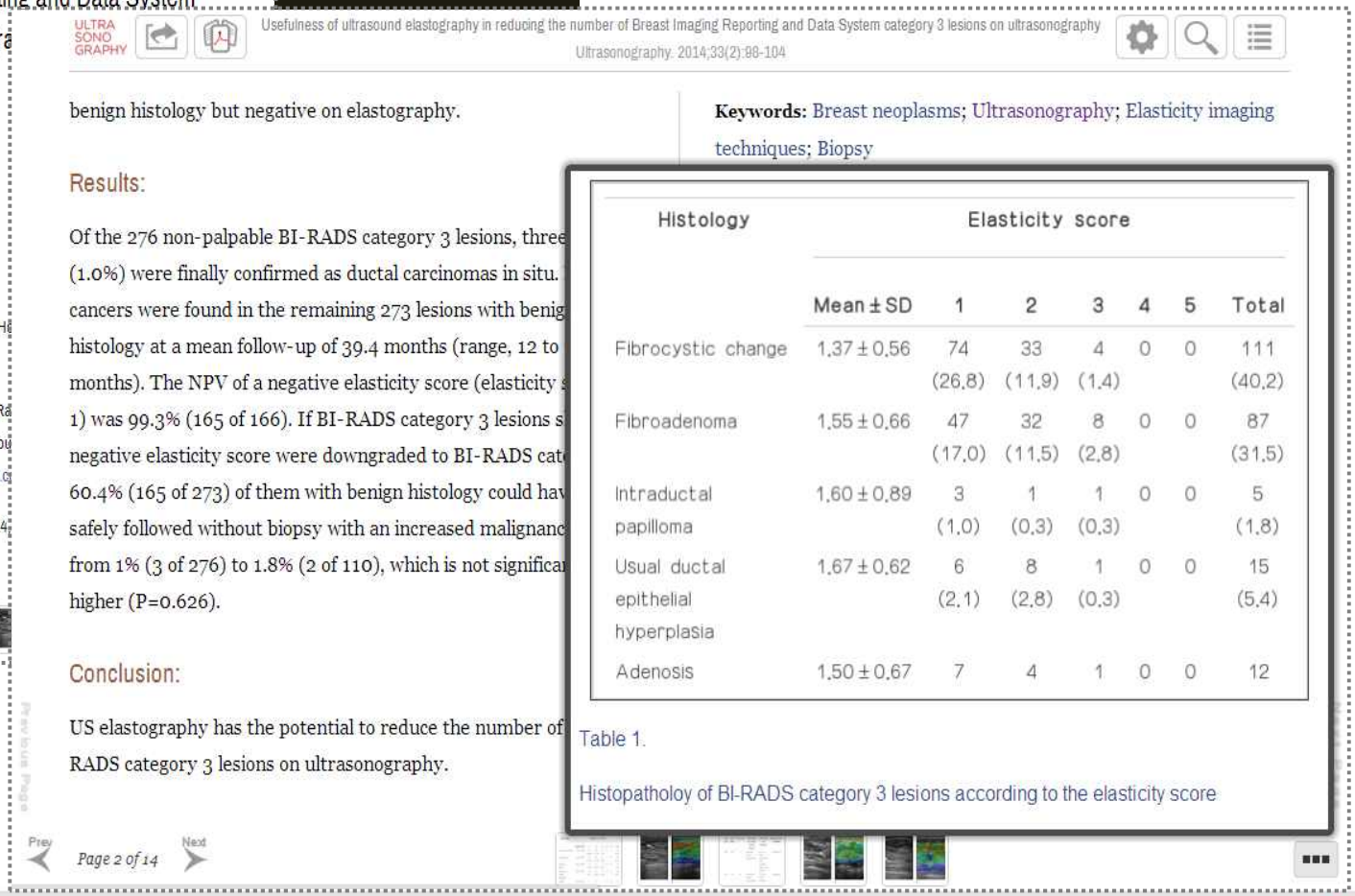


JATS XML to PubReader (Browser)

Single Column Screen



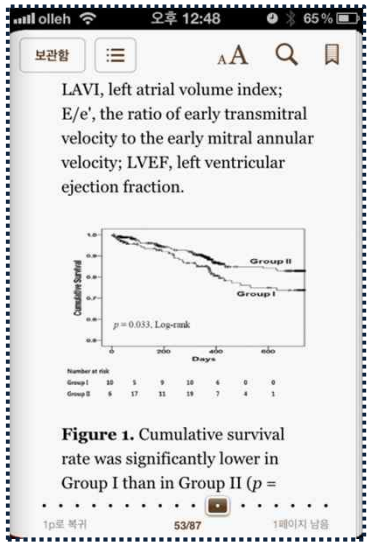
Double Column Screen

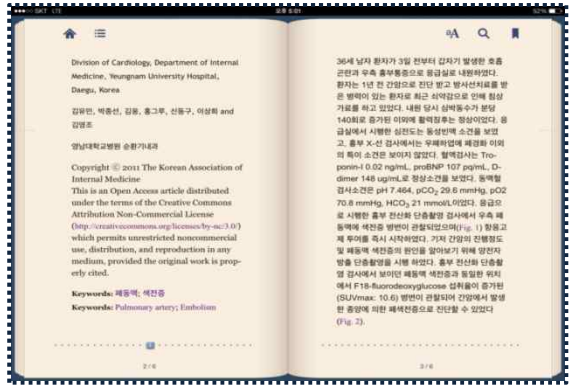


JATS XML to ePub

ePub (electronic publication)?

- A Standard of open type electronic book established from IDPF(International Digital Publishing Forum)
  - ✓ JATS XML is easy to be reused and converted into variable format such as ePub (eBook)
  - ✓ Automatic optimization to size of devices as converted into ePub





JATS XML (Table - XHTML, Equation -MathML)

Table - Image

Table 1
Patient characteristics

Characteristic	No. (%)	Characteristic	
Age (yr)	67 (18-79)	Clinical stage (AJCC)	
<65	15 (48)	I-IIB	
≥65	16 (52)	IIIA-IV	
Gender		Total dose (Gy)	
Male	24 (77)	<75	
Female	7 (23)	≥75	
ECOG performance status		Daily dose (Gy)	
≤1	15 (48)	<2.2	
≥2	16 (52)	≥2.2	
Smoking history		Monitor unit (MU)	
Yes	21 (68)	≤7,100	
No	10 (32)	>7,100	
Underlying lung disease		Chemotherapy	
Yes	9 (29)	Yes	
No	22 (71)	No	
Pre-RT FEV_1 (L)	2.0 (1.2-3.0)	CCRT	
<2.0	17 (55)	Yes	
≥2.0	14 (45)	No	19 (61)
Histology		No. of targets	
SqCC	11 (35)	<1	14 (45)
non-SqCC	20 (65)	≥2	17 (55)
Tumor location		PTV (cm³)	
Upper	18 (58)	<320	
Middle or lower	13 (42)	≥320	
Right	15 (48)		
Left	16 (52)		

Values are presented as number (%) or median (range). ECOG, Eastern Cooperative Oncology Group; RT, radiotherapy; FEV_1, forced expiratory volume in 1 second; SqCC, squamous cell carcinoma; AJCC, American Joint Committee on Cancer; CCRT, concurrent chemoradiotherapy; PTV, planning target volume.

Equation(MathML)

2.3. Data Analysis

The adsorption efficiency of heavy metal was calculated by the following equation:

(1)

$$\text{Adsorption efficiency } (\%) = \frac{C_o - C}{C_o} \times 100,$$

where C_o and C are the initial and final concentrations of a heavy metal (mg/L) in the sample solution, respectively.

To define the adsorption kinetics of heavy metal ions, the kinetic parameters were determined for contact times varying from 10 to 720 min. A pseudo-first-order equation, Eq. (2), and pseudo-second-order equation, Eq. (3), were used to fit the experimental data [16, 17]:

(2)

$$q_t = q_e[1 - \exp(-k_1 t)],$$

(3)

$$q_t = \frac{t}{\frac{1}{k_2 q_e^2} + \frac{t}{q_e}},$$

MathJax Equation Source - Chrome

about:blank

```
<math xmlns="http://www.w3.org/1998/Math/MathML" id="m1" display="block">
  <semantics id="sm1">
    <mrow>
      <mtext>Adsorption efficiency </mtext>
      <mo stretchy="false">(</mo>
      <mo>%</mo>
      <mo stretchy="false">)</mo>
      <mo>=</mo>
      <mfrac>
        <mrow>
          <msub>
            <mrow>
              <mi>C</mi>
            </mrow>
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          </msub>
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          <mi>C</mi>
        </mrow>
        <mrow>
          <msub>
            <mrow>
              <mi>C</mi>
            </mrow>
            <mi>o</mi>
          </msub>
        </mrow>
      </mfrac>
      <mo>&#xD7;</mo>
      <mn>100</mn>
      <mo>,</mo>
```

Table - XHTML

```
        <th align="center"></th>
        <th align="center"></th>
    </tr>
</thead>
<tbody>
    <tr valign="top">
        <td></td>
        <td>Deep vein thrombosis</td>
        <td>Pulmonary embolism, non-massivea</td>
        <td>Maintenance</td>
    </tr>
    <tr valign="top">
        <td>Heparin</td>
        <td align="center"></td>
        <td align="center"></td>
        <td align="center"></td>
    </tr>
    <tr valign="top">
        <td>Continuous infusion</td>
        <td>According to aPTT</td>
        <td>According to aPTT</td>
        <td align="center"></td>
    </tr>
    <tr valign="top">
        <td>Subcutaneous (SC)</td>
        <td>According to aPTT</td>
        <td>According to aPTT</td>
        <td align="center"></td>
    </tr>
    <tr valign="top">
        <td>Subcutaneous</td>
        <td>Weight-adjusted dose</td>
        <td>Weight-adjusted dose</td>
        <td align="center"></td>
    </tr>
    <tr valign="top">
        <td>Low-molecular-weight heparin</td>
        <td align="center"></td>
        <td align="center"></td>
        <td align="center"></td>
    </tr>
    <tr valign="top">
        <td>Dalteparin</td>
        <td>200 IU/kg SC daily</td>
        <td>200 IU/kg SC daily or 120 IU/kg SC every 12 hours</td>
        <td>150 IU/kg SC daily after 30 daysb</td>
    </tr>
    <tr valign="top">
        <td>Enoxaparin</td>
        <td>1.5 mg/kg SC daily</td>
        <td align="center">1.5</td>
        <td>mg/kg SC daily or  1.5</td>
        <td>mg/kg SC every 12 hours</td>
        <td align="center"></td>
    </tr>
```

Ultrasonography

Table 1.
Comparison of ABUS machine

Machine type	SonoCine	Somo-V (Siemens, GE)
Mechanism	Standard US transducer mounted onto an articulating arm	Large transducer similar to mammography compression paddle
Position	Supine	Supine
3D view	Not allow for 3D reconstruction	Allow for 3D reconstruction
Acquisition time	15-30 min	Approximately 15 min
FDA approval	2008	2012

ABUS, automated breast ultrasonography; 3D, three-dimensional; FDA, Food and Drug Administration.

Download Table

	A	B	C	D
1	Table 1.			
2				
3	Comparison of ABUS machine			
4				
5	Machine type	SonoCine	Somo-V (Siemens, GE)	
6	Mechanism	Standard US transducer mounted onto an articulating arm	Large transducer similar to mammography compression paddle	
7	Position	Supine	Supine	
8	3D view	Not allow for 3D reconstruction	Allow for 3D reconstruction	
9	Acquisition time	15-30 min	Approximately 15 min	
10	FDA approval	2008	2012	
11				
12	ABUS, automated breast ultrasonography; 3D, three-dimensional; FDA, Food and Drug Administration.			

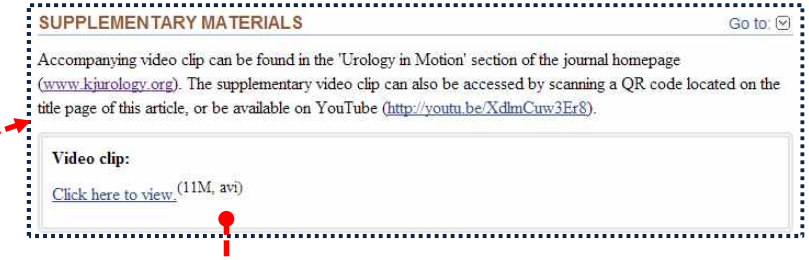
Process of JATS XML- Multimedia (Supplement) files

Cases of Multimedia service

1) A Journal
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4064045/?report=classic

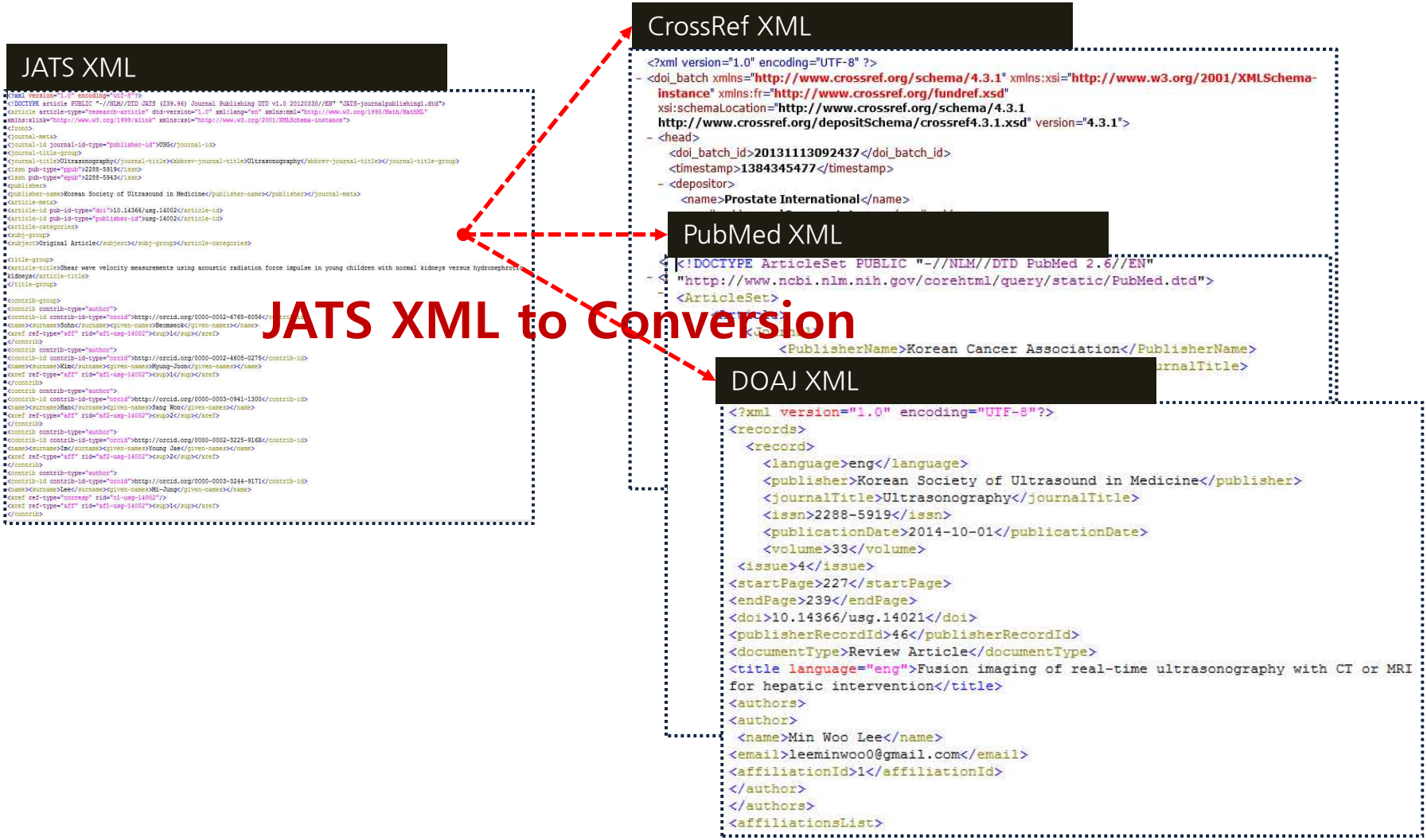
2)PLoS Biol
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC449897/?report=classic

3) C Journal
http://e-ultrasonography.org/journal/view.php?doi=10.14366/usg.14021



JATS XML to Conversion

- JATS XML is easily to be converted into variable XML format.



JATS XML to Conversion

Example)

1. JATS XML to PubMed XML

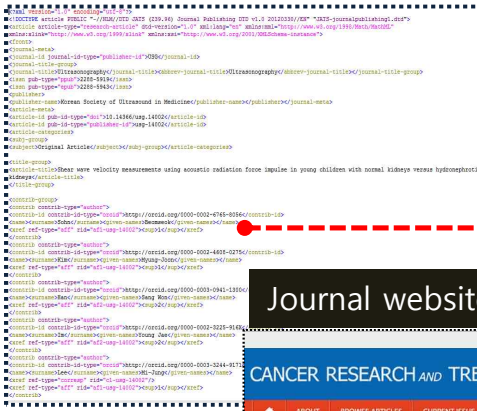
2. JATS XML to Crossref XML

3. JATS XML to DOAJ XML

```
<?xml version="1.0" encoding="UTF-8"?>
<records>
  <record>
    <language>eng</language>
    <publisher>Korean Society of Ultrasound in Medicine</publisher>
    <journalTitle>Ultrasonography</journalTitle>
    <issn>2288-5919</issn>
    <publicationDate>2014-10-01</publicationDate>
    <volume>33</volume>
 <issue>4</issue>
<startPage>227</startPage>
<endPage>239</endPage>
<doi>10.14366/usg.14021</doi>
<publisherRecordId>46</publisherRecordId>
<documentType>Review Article</documentType>
<title language="eng">Fusion imaging of real-time ultrasonography with CT or MRI
for hepatic intervention</title>
<authors>
<author>
 <name>Min Woo Lee</name>
<email>leeminwoo0@gmail.com</email>
<affiliationId>1</affiliationId>
</author>
</authors>
<affiliationsList>
```

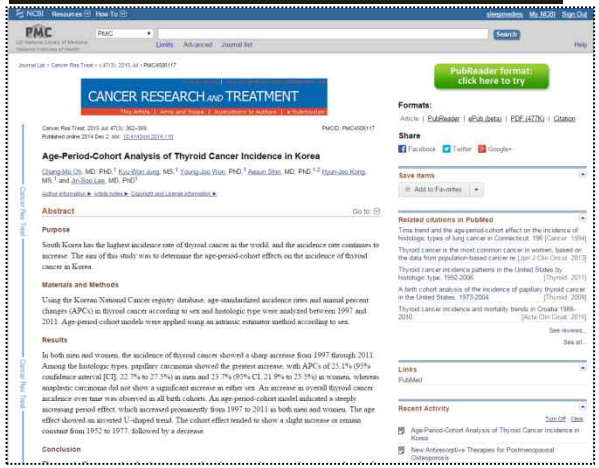
JATS XML-based full text database

PubMed Central or ScienceCentral

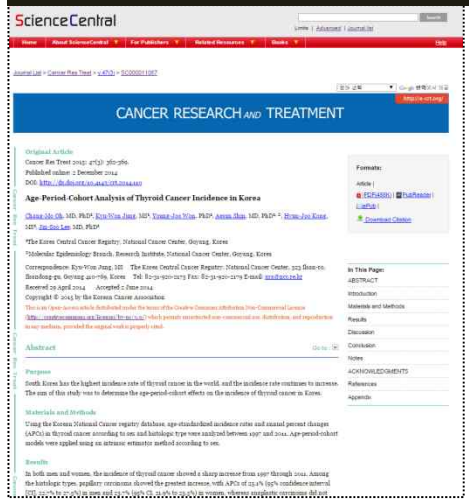


Journal website

PubMed Central



ScienceCentral



Thank you.

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